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# On The Role Of Harmonia In Plato's Philosophy

## Abstract

In this dissertation, I investigate Plato's apparently diverse usages of the notion 'harmonia' in order to ascertain a) whether these usages have anything in common and, relatedly, b) whether this notion plays a significant role in Plato's philosophy. I begin with a survey of pre-Platonic texts before turning to four key Platonic dialogues: the Gorgias, the Phaedo, the Republic, and the Timaeus in order to argue that, even though most contemporary studies of Plato's thought fail to study this notion in any detail, it nonetheless plays an important role in many of his central doctrines. I contend that harmonia is an intelligible, mathematical structure that operates throughout the microcosm (soul, body, city-state) and macrocosm (the universe) and, in each case, it serves to improve the entities in which it is instantiated. We need harmonia in order to ascend to the study of the Good which, for Plato, is the highest study; harmonia is, then, a crucial means to the most important end.

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Aditi Chaturvedi

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2018

**Supervisor of Dissertation**

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ON THE ROLE OF *HARMONIA* IN PLATO'S PHILOSOPHY

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For my father

Hemant Kumar Chaturvedi (1955–2018)

the real Doctor Chaturvedi

## Acknowledgments

This dissertation is dedicated to the memory of my father, my first philosophy teacher. He introduced me to philosophy with an excerpt from Plato's *Meno* – at an age where I was fascinated by the 'eristic paradox' – and encouraged me to follow this not strictly orthodox path. I am immensely grateful to him, as well as to all the other teachers in my life. These have been many; proceeding somewhat chronologically:

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special thanks to my supervisor, Susan Sauvé Meyer who has been a wonderful exemplar, not only qua writer and researcher but also qua teacher and mentor.

## ABSTRACT

### ON THE ROLE OF *HARMONIA* IN PLATO'S PHILOSOPHY

Aditi Chaturvedi

Susan Sauvé Meyer

In this dissertation, I investigate Plato's apparently diverse usages of the notion '*harmonia*' in order to ascertain a) whether these usages have anything in common and, relatedly, b) whether this notion plays a significant role in Plato's philosophy. I begin with a survey of pre-Platonic texts before turning to four key Platonic dialogues: the *Gorgias*, the *Phaedo*, the *Republic*, and the *Timaeus* in order to argue that, even though most contemporary studies of Plato's thought fail to study this notion in any detail, it nonetheless plays an important role in many of his central doctrines. I contend that *harmonia* is an intelligible, mathematical structure that operates throughout the microcosm (soul, body, city-state) and macrocosm (the universe) and, in each case, it serves to improve the entities in which it is instantiated. We need *harmonia* in order to ascend to the study of the Good which, for Plato, is the highest study; *harmonia* is, then, a crucial means to the most important end.

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## Introduction

Sit, Jessica. Look how the floor of heaven  
Is thick inlaid with patines of bright gold:  
There's not the smallest orb which thou behold'st  
But in his motion like an angel sings,  
Still quiring to the young-eyed cherubins;  
Such harmony is in immortal souls;  
— *The Merchant of Venice*

The notion of *harmonia* occupies a central position for the early Greeks in their writings on cosmology, society, and the self. As Emile Benveniste (1973, pp. 101–102) has noted, “order” is, in general, an extremely important concept for Indo-Europeans and is denoted by the Greek *harmonia*, the Sanskrit *ṛta* (order), Avestan *aša* (order), and the Old Persian *arta* (truthful order), all of which descend from the same Indo-European root — \*H<sub>2</sub>er. For the Pythagoreans — and, arguably, for other pre-Socratics such as Heraclitus and Empedocles — *harmonia* described the structure of a unified world order and, moreover, a particular *kind* of order, not only in the universe but in many other domains, including mathematics, cosmology, psychology, ethics, poetics, and music. What differentiates *harmonia* from some other notions of order is the fact that, although it joins entities together, it does not simply unite them into a homogeneity — it consists, rather, in alliance of multiple entities wherein both their similarity and their dissimilarity is recognized. I hope to clarify what this means in the chapters that follow.

My goal in this dissertation is to show that the *harmonia* is an important notion in Plato's ethics, politics, and metaphysics — even though it has been largely ignored

by contemporary commentators, especially in the anglophone world – and, further, that Plato’s usage of *harmonia*, although indebted to pre-Platonic usages of the term, is a unique function of his philosophical system. I lay the ground by exploring pre-Platonic notions of *harmonia* before turning to our central question: what is the role of *harmonia* in Plato’s philosophy? In answering this question, I focus primarily on the *Phaedo*, *Republic*, and *Timaeus*, while also drawing on material from some of the earlier dialogues.

I begin, in **Chapter 1**, by discussing the use of *harmonia* in pre-Platonic thinkers in order to illustrate the range of meanings that might have been available to Plato. Although the term “*harmonia*” is part of a broader conceptual field denoting order we see, in our survey of its pre-Platonic uses, how part of its power lies in its ability to lend itself to a range of contexts. First, we see the basic meaning, closest to its etymological roots, of ‘joining together,’ used in the context of carpentry in Homer’s *Odyssey*. Already in Homer, though, *harmonia* is used in an abstract sense to mean something like “agreement”.

Homer, Hesiod, and Pindar also all write about the goddess Harmonia who is the daughter of Ares and Aphrodite – in other words, even the goddess is a product of entities in tension. Although I do not discuss the Derveni Papyrus in the chapter, we might also note an interesting passage explaining why the goddess Harmonia received the name that she did:

‘[A]ρμονί᾽ α’  
δὲ  
ὅτι πο[λλὰ ....ή]ρμοσε τῶν ἐόντων ἑκάστῳ[1.]

Harmonia [*scil. received her name*] because she fitted together (*hērmosē*) many of the things that are to each [*scil. among them*]. Col. XXI,12-14

The earliest extant evidence of “*harmonia*” as denoting something musical is found in a fragment attributed to Pindar’s teacher, Lasus of Hermione; Pindar, too, seems to have been aware of different kinds of musical *harmoniai* (modes) – he mentions the Dorian, the Aeolian, and the Lydian in his odes. Pindar’s usage of *harmonia*, however, is much more nuanced – we encounter an abstract notion of *harmonia* in his odes that applies to cities and human behavior as well as to his own poetics. Pindar is, perhaps, the first to write about *harmonia* as a cosmological principle responsible for regulating both the microcosm and the macrocosm – an idea that is central to his near contemporary Heraclitus’ thought.

Heraclitus saw the universe as one that consisted of conflictual pairs that were held together by some kind of regulatory principle; I contend that this principle is *harmonia* and not the apparent *harmonia* that is found in music or in carpentry but what Heraclitus calls “*harmonīē aphanēs*” – the hidden metaphysical structure of the universe. Indeed Kahn (1981, p. 203) even claims that “*harmonīē aphanēs* might be taken as a general title for Heraclitus’ philosophical thought. Although much of Platonic metaphysics is at odds with Heraclitus’, they both share the notion of an intelligible

cosmic *harmonia* that most mortals fail to grasp. Heraclitus also plays with the multiple meanings of our word, invoking musical *harmonia*, mechanical *harmonia*, and, finally, intelligible cosmic *harmonia*. Empedocles' universe is driven by Love (*philotēs*) and Strife (*neikos*) and, thus, *harmonia* does not play as central a role as it does for Heraclitus. Empedocles does, however, connect *harmonia* to corporeal composition and even uses it to refer to a cosmic fitting together. What is most striking is his connection of *harmonia* to mathematical ratios – this is an idea that finds its fullest early expression in the fragments of Philolaus.

Philolaus, who is often regarded as our only source of pre-Platonic Pythagoreanism, describes a *kosmos* in which unlimited and limited entities are joined together according to harmonic ratios. I follow McKirahan (2013) in arguing that Philolaus takes number to be the key to knowledge and *harmonia* to be the key to reality; knowledge and reality are then connected, for him, by relating *harmonia* to number. *Harmonia* is a mathematical structure for Philolaus and, as I hope to show, it is this view that is closest to that of Plato's. I conclude the first chapter by considering the role of *harmonia* in the Hippocratic corpus. I argue that Hippocratic medicine did not conceive only of isonomic proportion as a positive somatic state, as was presumably the case for Alcmaeon. *Harmonia* plays an important role both in Hippocratic dietetics and in Hippocratic embryology. The Hippocratic texts also use the word in a variety of ways – we read about, for instance, the *harmoniai* in various *technai*, the *harmonia*

that has to do with number, and mechanical *harmonia* that stands for the joint between the two hemispheres of the skull.

Having laid out some key pre-Platonic notions of *harmonia*, I go on to discuss order that isn't *harmonia* in **Chapter 2**. I discuss the *Gorgias* in order to show how Plato emphasizes the connection between order (*kosmos, taxis*) and goodness. Already in the *Gorgias* we have the notion that a soul with order (*kosmos*) will be a healthy and virtuous soul. Plato doesn't talk about good souls as possessing *harmonia*, though, until the *Phaedo*, which I discuss in **Chapter 3**. This is understandable, since Plato does not really discuss the nature of the soul until the *Phaedo*. I show, in Chapter 1, that the basic prerequisite for *harmonia* is the presence of two or more entities in a state of tension. Plato does not even consider that the soul could be mereologically complex until the *Phaedo*; it is unsurprising, then, that he uses "*kosmos*" rather than "*harmonia*" to denote psychic order in the *Gorgias*. In the *Phaedo*, however, we are presented with Simmias' rather remarkable thesis about souls being mereologically complex *harmoniai*, which I read as a materialist thesis. Socrates famously offers a series of refutations to Simmias' claim and in the course of his arguments against Simmias, Socrates describes *harmonia* as something that good souls possess and evil souls lack. We learn, thus, that Simmias is making a category mistake and *harmonia* is something that a soul *has* and not something that a soul *is* since harmonious entities are *good* entities.

The ideas that are hinted at and briefly mentioned in the *Phaedo* and the early dialogues are then developed more fully in the *Republic*, to which I devote **Chapter 4**. First, I discuss the educational program for auxiliaries and guardians in Plato's ideal cities; this education will only include those *harmoniai* – here understood as musical modes – that inculcate virtues in the malleable souls of children. Then, I turn to the famous discussion of justice and virtue, showing how Plato believes that not only justice but virtue in general requires that the soul possess *harmonia*. His discussion of vicious souls and vicious cities in Book VIII of the *Republic* reinforces the ideas found in Book IV and gives us even more evidence that his choice of “*harmonia*” isn't just coincidental – he explicitly identifies an isonomic proportion, such as that found in a democracy, with a vicious state of the soul and the city. *Harmonia*, unlike *isonomia*, binds elements together in an unequal proportion and justice, for Plato, requires that the higher elements master and the lower elements be mastered<sup>1</sup>. *Republic* VII also emphasizes that the young people selected to be guardians of the ideal city will be required to study the mathematical sciences for ten years – these sciences, propaedeutic for dialectic that culminates in the study of the Good, are, in ascending order of

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<sup>1</sup> Mathematically, *harmonia* is a kind of ratio; musically, these ratios are used to designate intervals (*diastēma*) between notes. Intervals can only occur between sounds that are not one and *harmonia* can only refer to ratios or intervals that are not in a 1:1 ratio.

importance<sup>2</sup>, arithmetic, geometry, stereometry, astronomy and, finally, harmonics. However, in each of these cases, the concern ought to be intelligible rather than sensible entities. Thus the object of philosophical harmonics will be intelligible *harmonia* – that which is found in numbers – and not audible consonances. This is an important key for understanding Plato's views on *harmonia*.

The *Timaeus*, which I discuss in **Chapter 5**, fills in, as it were, the remaining blanks. In this dialogue, Plato posits that the world (*to pan*), which was created by a Demiurge, an intelligent creator-god, has a harmonically structured soul. The World Soul, which gives intelligence and life to the body of the world, and which is identical in structure to the immortal part of the human soul before it is embodied, participates in *harmonia*, which is said to belong to the realm of intelligible and eternal entities. I discuss the passages describing the harmonic structure of the World Soul before turning to disorder in the human soul and showing how, through audible music, the disordered and disharmonious embodied human soul is expected to regain the *harmonia* bestowed upon it prior to embodiment by the Demiurge. The *Timaeus* shows how *harmonia* functions in the universe and also in the individual – both in the soul and the body – and clearly identifies the best kind of *harmonia* as being an intelligible entity, reinforcing our conclusions from *Republic* Book VII.

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<sup>2</sup> See Burnyeat (2000) and Wersinger (2007) for the contention that the order in which the sciences are presented represents a hierarchy.



This brief survey should be enough to show us that *harmonia* is not an insignificant aspect of Plato's ethical and metaphysical views. However, most works that treat these topics in Plato do not even mention the notion. The few times that it *does* get discussed is in the context of musical harmony<sup>3</sup> or in the context of the so-called harmony of the spheres – an idea which, although much discussed by neo-Platonists, neo-Pythagoreans, and medieval philosophers, is rarely even alluded to by Plato<sup>4</sup> or his predecessors. A few examples from the literature might make my point clearer.

In his otherwise detailed study of Plato's ethics, Irwin (1995), for instance, fails to devote any attention to *harmonia*. White (2002) talks about 'Hellenic harmony' and attempts to situate Plato's discussion of *harmonia* in *Republic* IV within the broader Hellenic notion of harmony between one's happiness and ethical norms; such a discussion completely ignores the particularity of the Platonic notion of *harmonia*. The 'harmony' of the soul in *Republic* IV is indeed often read as a metaphorical harmony or

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<sup>3</sup> Even in the case of music, Moutsopoulos (1959) offers the only comprehensive account of the role of music in Plato's thought. Pelosi (2010) also discusses music in Plato philosophy with an aim to exposing Plato's views on psychological dualism. As I go on to argue, musical *harmonia* does not occupy an especially exalted place in Plato's thought and it is a mistake to focus on musical *harmonia* to the exclusion of all the other kinds of *harmoniai* or to treat the other *harmoniai* separately from musical *harmonia*. Rizek (1998) purports to write about *harmonia* in Plato, but, again, his analysis, although interesting, is restricted to music and attributes a kind of 'Pythagoreanism' to Plato that is little supported by textual evidence.

<sup>4</sup> With the exception, perhaps, of *Republic* X.

as little more than a synonym for ‘unity’ or ‘agreement’ as, for example, in Irwin (1995, p. 227).<sup>5</sup> Even those, such as Annas (1981) and Vlastos (1969) who write about psychic harmony in *Republic* IV fail to connect it to Book VII of the *Republic*, let alone to any other work within the Platonic corpus.

On another extreme we have scholars such as Rizek (1998) and McClain (1984) who seek to assimilate Plato’s views on *harmonia* to a kind of Pythagoreanism; this approach, too, is misleading and ignores Plato’s explicit distancing of his views from Pythagorean ones in *Republic* VII and elsewhere. In the first place, we have very little evidence of Pythagoreanism that is prior to Plato. Further, the evidence that we do have, suggests that, although they were interested in the *harmonia* present in nature, there were nonetheless empirical constraints on their investigation and Plato would have found them guilty of putting their ‘ears before understanding’ because of the privileged position allegedly accorded by them to audible consonances<sup>6</sup>.

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<sup>5</sup> Burnyeat (2000) remains a notable exception and I touch upon his rejection of a metaphorical reading of Platonic *harmonia* in the final chapter of this dissertation.

<sup>6</sup> See Horky (2013) for a recent and fairly comprehensive account of the relation of Plato to earlier Pythagoreans, especially with respect to his views on mathematics. Even though he argues that, in a way, Plato *was* a Pythagorean, this statement is qualified throughout by what we understand by ‘Pythagoreanism’ and by which aspects of early Pythagorean doctrine had an influence on Plato. His account seeks only to establish that Plato’s theories about language (particularly essential predication) and number were influenced by the theories of Hippasus, Philolaus, and Archytas. This seems to me to be both plausible and well-founded, unlike claims about the musical composition of Plato’s dialogues or the presence of a ‘Pythagorean’ belief about the *harmonia* of spheres in Plato’s dialogues.

The only work, at least in the last century, that deals exclusively with the notion of *harmonia* in Greek thought in Plato (and prior to Plato) is P. Bonaventura Meyer's dissertation (1932) on the *Bedeutungsgeschichte* of the term from Homer until Aristotle and, although he does an excellent job of collecting and organizing most of the relevant passages and offers some valuable insights, he does not offer much by way of philosophical analysis; indeed it would be impossible to do complete justice to a corpus of that size in work as brief as his. Since then, Anne-Gabriel Wersinger has discussed Platonic *harmonia* in two books : *Platon et la dysharmonie* (2001) and *La sphère et l'intervalle* (2001). In the latter work, she discusses a range of ideas – such as *peras* and *apeiron*, one and many, and also *harmonia* – in the works of Heraclitus, Parmenides, Empedocles, Zeno, and the later Plato. In the former work, she is concerned mostly with the philosophical implications of the *musical* form of *harmonia*.

As I've mentioned earlier, my goal is not just to study any one aspect of *harmonia* but, rather, to uncover what these different *harmoniai* have in common. In her book on the metaphysics of structure in Plato, Harte (2002, p. 271) claims that the normativity of structure has an ethical dimension and that, perhaps, “the best way to illustrate this dimension is to pick up on the wider resonances of Plato's talk of harmony in describing the nature of wholes”; however, as she states, such an examination is beyond her scope. I hope to at least begin such an investigation in this dissertation.

While the works of Meyer and Wersinger have been invaluable to me, my scope in this dissertation is at once narrower and deeper, since I aim to uncover what, if anything, Plato's different usages of *harmonia* have in common by focusing on three key texts (*Phaedo*, *Republic*, and *Timaeus*). I do not believe that there are glaring lacunae in my treatment of Platonic *harmonia*, my discussion of *harmonia* – both in the Platonic corpus<sup>7</sup> and in pre-Platonic thought – is not intended, by any means, to be exhaustive. I do not discuss every single token of the word “*harmonia*” or relevant cognates from Homer until Plato. Rather, my goal is to show that *harmonia* is an important structural principle in Plato's philosophy, both in the microcosm and the macrocosm – consequently, I only discuss a representative sample of pre-Platonic views and I only discuss those passages in Platonic texts that are necessary for me to illuminate my argument.

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<sup>7</sup> Notably, I do not discuss *harmonia* in the *Laws*, except for brief comments in my chapter on the *Republic*. I also do not spend time on *harmonia* in the *Philebus*. Among the pre-Platonic figures, I have not discussed *harmonia* as used by the tragedians, for instance, because my goal in the first chapter was to lay out the different types of *harmonia* and I believe that I have done so. I do not, perhaps, have as detailed a discussion of pre-Platonic political *harmonia* as I could but I hope that my discussion of *harmonia* in Plato's *Republic* corrects for this to some extent.

## Chapter 1: Pre-Platonic Doctrines of Harmonia

As I mentioned in the introduction, the term “*harmonia*” has a rich pre-Platonic life and it is important that we be clear about the multiple meanings of ‘*harmonia*’ (‘*harmonie*’ in Epic and Ionic Greek) in order to better understand Plato’s usage of the term. In this chapter, I attempt to shed light on these multiple meanings by discussing the uses of *harmonia* in the writing of Homer, Pindar, Heraclitus, Empedocles, Philolaus, and in the Hippocratic corpus. While the primary meaning of ‘*harmonia*’, as evidenced in the Homeric corpus, is a mechanical one, ‘*harmonia*’ also functions as a cosmological principle of balance (Heraclitus and Empedocles), a cosmogonic principle related to musical-mathematical ratios (Philolaus), and a state of physical well-being (Hippocratic corpus).

Before we begin, I would like to say something about the etymology of our word — “ἵα”, (-ῖα) is an abstract suffix added to a conjectural theme \**ar-mn*, which itself presumably comes from the Indo-European root \**H<sub>2</sub>er-* (fit)<sup>8</sup>. *Harmonia* does not, of course, mean what contemporary music theorists define as ‘harmony.’ In fact, as the

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<sup>8</sup> Ilievski (1993) traces the root back to Linear B. He claims that the dialectical basis of the noun (h)armo and the verb *harmozō* can be explained only by phonetic rules according to which the inherit IE vocalic nasal -mn- developed a reflex -mo-; the verb is a technical term too and, he claims, there is no doubt that the noun *harmonia* is derived from this verb.

other words that are derived from this root suggest<sup>9</sup>, the earliest uses of *harmonia* are not even specifically musical; it refers not only to musical fitting together but also to the physical act of binding. Finney (1973, p. 383) puts it well when she describes *harmonia* as a “reconciliation of opposites, a fitting together of disparate elements, whether in music, universe, the body politic, or the body of man.”

I would like to make one final note before turning to Homer. The reader might wonder why I have chosen to discuss Homer and Pindar alongside the pre-Platonic ‘philosophers’. The reasons for this are numerous. For one, as Glenn Most (2006, p. 332) has rightly pointed out, many archaic Greek ‘philosophers’ didn’t make a sharp distinction between ‘poets’ and ‘philosophers’. Heraclitus, for instance, mentions Hesiod and Hecateus alongside Xenophanes and Pythagoras without giving us any reason to believe that he thought of the first two as engaged in a different pursuit than the latter two; even Plato does not seem to make such a distinction. Indeed, it is not until Aristotle that *mythologoi* are contrasted with *physiologoi*<sup>10</sup> and even with Aristotle’s taxonomy in mind, some pre-Platonic figures defy easy categorization.

However, there are yet more substantive reasons, some of which I will discuss

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<sup>9</sup> These include verbs like *harmozō* (fit together), *arariskō* (join together) and nouns like *harma* (chariot), *arithmos* (number), *artus* (bond), *arthron* (joint), etc.

<sup>10</sup> See, for instance, the beginning of Aristotle’s *Poetics*: οὐδὲν δὲ κοινόν ἐστιν Ὀμήρῳ καὶ Ἐμπεδοκλεῖ πλὴν τὸ μέτρον, διὸ τὸν μὲν ποιητὴν δίκαιον καλεῖν, τὸν δὲ φυσιολόγον μᾶλλον ἢ ποιητήν. 1447b 17–20

later, and many of which map on to the arguments that Most (2006) offers. He contends that some of the “fundamental criteria that the Greek philosophers were obliged to try to satisfy in their reflections” resemble, in striking ways, “the most prominent features of the works of Homer and Hesiod” (334). He understands these similarities not as an accidental feature but rather “as a concrete measure of the extraordinary literary, educational, and cultural successes of a very small number of poetic texts, those ascribed to Homer or Hesiod” (*ibid.*). Most (2006, pp. 335–336) also draws attention to the “curious decision” of Xenophanes, Parmenides, and Empedocles to use dactylic hexameters to convey their philosophical views, even though they postdate the invention of philosophical prose and to the “immanent poetics” of these three as well as Heraclitus who, too, made great use of poetic language<sup>11</sup>. He concludes:

[I]t is not surprising that they [early Greek philosophers] had a more conscious, and perhaps more fruitful, dependence upon the basic texts of their culture (which in the case of Greek culture were poetic texts) than many modern philosophers do. To ignore this dependence, to disparage it as unphilosophical, or even just to excuse it as a regrettable form of primitive thought from which the really interesting core, the logical arguments, can be extracted and rescued, is inadvertently to acknowledge allegiance to a very recent and quite provincial notion of what philosophy is and is not, and to retroject that notion unhistorically into a discursive situation of the distant past whose participants would certainly have found such ideas very strange indeed.

For my purposes, it is neither informative nor prudent to restrict my study only to

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<sup>11</sup> For more on Heraclitus’ style, see Kahn (1981).

those whom Diels — following Theophrastus who was, in turn, following Aristotle — termed the “*Vorsokratiker*”. With the caveats out of the way, let us now begin our survey of pre-Platonic uses of “*harmonia*”.

## I. Homer

The primary Homeric use of “*harmonia*” illustrates its basic meaning of “physical joining together”. The noun occurs six times in the corpus and is only ever used in its plural form. Our word can be found twice in Book V of the *Odyssey*. This first time is when Odysseus is building his raft in order to leave Calypso’s island<sup>12</sup>. He cuts down twenty tall alder, poplar, and fir trees in order to do so:

τέτρηνεν δ' ἄρα πάντα καὶ ἤρμοσεν ἀλλήλοισι,  
γόμφοισιν δ' ἄρα τήν γε καὶ ἁρμονίησιν ἄρασσεν.

...and he bored all of them and fit them to each other, then with pegs and fastenings (*harmoniai*) joined it together. *Odyssey*, V.247–8<sup>13</sup>

It is striking that these two lines use four words that all come from the same root — *ar\** (to join, fit together). As Meyer (1932, p. 10) notes, the words surrounding “*harmonīēsīn*” help us understand what it means: “*harmozō*” means to fit things together and “*arassō*” means to strike hard or to smite. In the raft, the “*harmoniai*” are parallel to

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<sup>12</sup> A similar usage can be found in Herodotus’ *Persian Wars* II.96: “ἐπεὰν δὲ τῷ τρόπῳ τούτῳ ναυπηγήσωνται, ζυγὰ ἐπιπολῆς τείνουσι αὐτῶν· νομεῦσι δὲ οὐδὲν χρέωνται· ἔσωθεν δὲ τὰς ἁρμονίας ἐν ὧν ἐπάκτωσαν τῇ βύβλῳ.”

<sup>13</sup> Translations in this chapter are mine unless otherwise noted.



the “*gomphoi*” (bolts) and are a means by which the planks are joined together. “*Harmozein*,” “*arassen*,” and “*harmonia*” all put one in mind of a compound composed of discrete entities that are then fixed together. The other instance in the *Odyssey* is later in Book V (361-2):

ὄφρ' ἂν μὲν κεν δούρατ' ἐν ἁρμονίῃσιν ἀρήρη, / τόφρ' αὐτοῦ μενέω καὶ  
τλήσομαι ἄλγεα πάσχων·

As long as these timbers are held together by fastenings (*harmoniai*), I'll stay where I am and endure it, suffering sorrows.

Here, we are given yet another word derived from *ar*<sup>\*</sup>, namely *arariskō*, which also means “to fit together”. The *harmoniai* here are like the *gomphoi* — they physically bind discrete entities. However, we have evidence, even in Homer, for a non-material use of “*harmonia*” — in the *Iliad*, where the term is used only once.

In Book XXII of the *Iliad*, Zeus weighs the fate of Hector and Achilles, and in the brief exchange between Athena (disguised as Deiphobos) and the heroes, she tells Achilles to stand and draw breath and encourages Hector to face Achilles. Hector then tells Achilles that he is ready to fight and has a discussion with him about the terms of the duel:

ἀλλ' ἄγε δεῦρο θεοὺς ἐπιδώμεθα· τοὶ γὰρ ἄριστοι / μάρτυροι ἔσσονται  
καὶ ἐπίσκοποι ἁρμονιάων·

Come then let us take as witness the gods; For these are the best who shall be witnesses and watch over our agreements (*harmoniai*).  
*Iliad*, XXII.255-6

Here, too, *harmonia* refers to a kind of joining or adapting, but its use here is figurative, unlike in the *Odyssey*. In this passage, *harmonia* refers to the product of the joining or balancing of the oaths between two people in a state of tension; the relata of *harmonia* were planks of wood in the case of the *Odyssey* and here they are words or, more specifically, oaths<sup>14</sup>. Mele (2009, p. 37) claims that we can even see shadows of “*harmonia*” in the anthroponym for the carpenter who built the ships with which Paris left for Sparta — ‘Αρμονίδης.

The fourth and final occurrence of the term in the Homeric corpus is in the Homeric hymn to Apollo (194-6), where the reference is to ‘Αρμονία rather than ἄρμονία:

αὐτὰρ εὐπλόκαμοι Χάριτες καὶ εὐφρονες ῥῶραι/Ἀρμονίη θ' Ἥβη τε  
Διὸς θυγάτηρ τ' Ἀφροδίτη/ὀρχεῦντ' ἀλλήλων ἐπὶ καρπῷ χεῖρας  
ἔχουσαι·

Meanwhile the Charites with the beautiful hair and the gracious Horae join with Harmonia, Hebe, and the daughter of Zeus, Aphrodite in dance holding each other's hands by the wrist.

Aphrodite is associated with the Charites in dance elsewhere in Homer (*Od.* 18.194,

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<sup>14</sup> A similar use of *harmonia* can also be seen, centuries later, in Aeschylus' *Prometheus Bound* (547-551): τίς ἐφαμερίων ἄρηξις; οὐδ' ἐδέρχθης/ὀλιγοδρανίαν ἄκιυν,/ἰσόνειρον, ᾧ τὸ φωτῶν ἀλαδὸν γένος ἐμπεποδισμένον; οὐποτε —/τὰν Διὸς ἄρμονίαν θνατῶν παρεξίασι βουλαί.

What help can there be from creatures of a day? Did you not even consider the helpless, dreamlike feebleness by which the blind race of men is fettered? Never will the schemes of mortals transgress the ordering (*harmonia*) of Zeus. tr. Sommerstein

We might call this a civic or political use of the term.

HH 5.61); her robe is also called the work of the Charites and, sometimes, the work of the Charities and Horae. The Charites are also often associated with Apollo and the Muses and they, along with the Horae, are usually portrayed singing, dancing, and playing instruments. It is unclear why exactly Harmonia and Hebe are part of this procession. According to Hesiod, Harmonia was the daughter of Aphrodite and Ares, so perhaps this is why she is included<sup>15</sup>. At any rate, this shows us that there was some kind of loose association of Harmonia with song and dance and with the Delian Apollo<sup>16</sup>. We learn more about the goddess in the odes of Pindar, to whom I turn next.

## II. Pindar

The association of *harmonia* with the semantic field of ‘music’ seems to have remained alien to Homer (the loose association of the goddess with music aside) and it is in a fragment (702) by Pindar’s teacher, Lasus of Hermione, that we have the earliest extant reference to *harmonia* as a musical mode:

Δάματρα μέλπω Κόραν τε Κλυμένοι’ ἄλοχον μελιβόαν ὕμνον

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<sup>15</sup> For more on the goddess, see Jouan (1980).

<sup>16</sup> I have not chosen to comment on any post-Platonic writings about Pythagoras in this chapter, but it nonetheless might be worth pointing out, here, that Iamblichus reports that Pythagoras considered the power of the Muses to include ‘the concord and harmony of being’ in a speech that he supposedly made to the young men of Croton: ὁ δὲ πρῶτον μὲν αὐτοῖς συνεβούλευεν ιδρύσασθαι Μουσῶν ἱερόν, ἵνα τηρῶσι τὴν ὑπάρχουσαν ὁμόνοιαν· ταύτας γὰρ τὰς θεὰς καὶ τὴν προσηγορίαν τὴν αὐτὴν ἀπάσας ἔχειν καὶ μετ’ ἀλλήλων παραδεδόσθαι καὶ ταῖς κοιναῖς τιμαῖς μάλιστα χαίρειν, καὶ τὸ σύνολον ἓνα καὶ τὸν αὐτὸν αἰεὶ χορὸν εἶναι τῶν Μουσῶν, ἔτι δὲ συμφωνίαν, ἁρμονίαν, ῥυθμόν, ἅπαντα περιεληφέναι τὰ παρασκευάζοντα τὴν ὁμόνοιαν. ἐπεδείκνυε δὲ αὐτῶν τὴν δύναμιν οὐ περὶ τὰ κάλλιστα θεωρήματα μόνον ἀνήκειν, ἀλλὰ καὶ περὶ τὴν συμφωνίαν καὶ ἁρμονίαν τῶν ὄντων. *VP*, 9.45

ἀναγνέων Αἰολίδ' ἅμ βαρύβρομον ἁρμονίαν.

I sing of Demeter and the Maiden, wife of Clymenus, raising the honied shout of a hymn in the deep-sounding Aeolian *harmonia*.

Although Lasus was supposed to have written the first *logos* about music according to Martianus Capella (9.936), this text has not survived<sup>17</sup>. In Pindar's odes, we encounter the goddess Harmonia – who had already been written about in Hesiod and in the Homeric corpus — in addition to *harmonia* as musical mode. In this section, I discuss both of these. I also follow Hubbard (1979, pp. 350–359) in positing that Pindar might also have used *harmonia* in an abstract, cosmological sense. In Hubbard's words, Pindar is the “ultimate figure of mediation” —

Pindar was situated between the indeterminate boundlessness of Heraclitean becoming and the secure boundedness of Parmenidean being. He was situated between Anaxamandrian *apeiron* and Pythagorean *peras*, between the semantic fluidity of archaism and the semantic discrimination of the sophists. (1979, p. 355)

It is fitting, then, that we look at Pindar's usage of the term before we turn to Heraclitus.

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<sup>17</sup> According to Porter (2007, p. 1), “(Lasus) was a musical innovator on several fronts: he wrote the first treatise on music and conducted empirical acoustic experiments; he introduced the dithyrambic competitions in Athens at around 508 BCE after the death of his patron Hipparchus, and was himself a composer and innovator in the genre; he also innovated in auletic technique, choral arrangements (having invented the circular chorus), and the sounds of choral songs.” However, as Barker (2011, p. 19) notes, “We are in no position to reconstruct Lasus' ideas or to identify the relation, if any, in which his *logos* stood to the writings of the later theorists.”

### III. 1 The goddess Harmonia

Pindar mentions the goddess in *Pythian* 3 and *Pythian* 11:

αἰὼν δ' ἀσφαλὴς/οὐκ ἔγεντ' οὔτ' Αἰακίδα παρὰ Πηλεΐ/οὔτε παρ'  
ἀντιθέῳ Κάδμῳ· λέγονται {γε} μὲν βροτῶν/ὄλβον ὑπέρτατον οἷ  
σχεῖν, οἷτε καὶ χρυσαμπύκων/μελπομενᾶν ἐν ὄρει Μοισᾶν καὶ ἐν  
ἐπταπύλοις /ἄϊον Θήβαις, ὁπόθ' Ἀρμονίαν γᾶμεν βοῶπιν,/ —ὁ δὲ  
Νηρέος εὐβούλου Θέτιν παῖδα κ'λυτάν

But a life unshaken befell neither Peleus called Aiakidas nor godlike Kadmus, yet men say these two were given blessedness beyond all mortals. They heard on the mountain and at seven-gated Thebes the gold-chapleted Muses singing when one married ox-eyed Harmonia, and the other wise Nereus' legendary daughter, Thetis. *Pythian*, 3.87-92. tr. Lattimore

ὦ παῖδες Ἀρμονίας,/ένθα καί νυν ἐπίνομον ἥρωΐδων /στρατὸν  
ὁμαγερέα καλεῖ συνίμεν,/ ὄφ'ρα θέμιν ἱερὰν [...]

Children of Harmonia, there even now he calls the local host of heroines to gather together in assembly, so that you may celebrate holy righteousness[...] *Pythian*, 11.7-12 tr. Lattimore

*Pythian* 3 was written in honor of Hieron of Syracuse, who won the race for single horse and the approximate date of composition is 474 BCE; *Pythian* 11 was written for Thrasydaeus of Thebes, probably for a victory at a stadion race, and most of the *scholia* settle on 474 BCE as the date of composition. *P.11* also gives us a vivid account of the Agamemnon myth. In both these odes, the reference is to the goddess Harmonia who was married to Kadmus.

Harmonia was the child of Ares and Aphrodite<sup>18</sup> and, when Athena assigned the government of Thebes to Kadmus, Zeus gave him Harmonia as his wife. She was the mother of Ino, Semele, Agave, Autonoe, and Polydorus according to Hesiod (*Theog.* 933–37); Pindar mentions these daughters of Harmonia in *P.* 11 as well. Harmonia's wedding to Kadmus was represented in various vase paintings in antiquity and was also a popular literary topic<sup>19</sup>. According to Pindar (*O.* 2.78), Harmonia and Kadmus were transferred to the Isle of the Blessed at the end of their lives.

It is worth noting that Harmonia was born of gods who represent polarities — love and strife. In this way, she embodies the abstract quality of *harmonia* as well. Further, she was a goddess who married a mortal (Kadmus) — again, a junction of sorts between polarities. This idea of joining discrete entities into a whole serves well as a description of *harmonia* in all its domains, especially music.

### III.2 *Harmonia* as musical mode

Let us begin with an ode that explicitly mentions the Lydian *harmonia*.

ἐξύφαινε, γλυκεῖα, καὶ τόδ' αὐτίκα, φόρμιγξ, / Λυδία σὺν ἁρμονίᾳ μέλος  
πεφιλημένον Οἰνώνᾳ τε καὶ Κύπρῳ, ἔνθα Τεῦκρος ἀπάρχει / ὁ  
Τελαμωνιάδας [...]

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<sup>18</sup> A Samothracian cult saw her as the daughter of Zeus and Electra, but this is not the version that Pindar refers to.

<sup>19</sup> The marriage resembles, to a great extent, the wedding of Peleus and Thetis — a goddess marrying a mortal and the presence of an object destined to bring misfortune (the apple of discord in the case of Peleus and Thetis and Hephaestus' cursed necklace in the case of Harmonia and Kadmus).

Weave then this song to its end without delay, sweet lyre, in the Lydian *harmonia*, one loved by Oenone and Cyprus, where Teucer son of Telamon rules, far from home;[...] *Nemean*, 4.44–49 tr. Lattimore

*Nemean* 4 is an epinician of an uncertain date and, along with *N.8* and *O.14*, uses the Lydian mode<sup>20</sup> in connection with young athletes. *O. 14* addresses the Charites and mentions Apollo as well:

[...] Λυδῶ γὰρ Ἀσώπιχον ἐν τρόπῳ/ἐν μελέταις τ' αἰείδων ἔμολον,/οὔνεκ'  
Ὀλυμπιόνικος ἅ Μινύεια/σεῦ ἕκατι.[...]

[...] for I have come singing of Asopichus, composing in my accustomed way in the Lydian *tropos*, because with your aid the city of the Minyans has triumphed at Olympia.  
*Olympian*, 14.17–20

Even though Pindar uses “*tropos*” and not “*harmonia*” we can follow Anderson (1966, p. 35) who has argued that *tropos* can largely be identified with the kinetic aspects of *harmonia*. Finley (1966, pp. 78–9) contends that this poem shows Pindar’s belief that harmony is the special trait and possession of the Olympian gods, that the presence of

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<sup>20</sup> *Nemean* 8 also mentions the “Lydian” but doesn’t use the term ἁρμονία:

Λυδῖαν μίτραν καναχήδ᾽ πεποικιλμέναν,/Δείνιος δισσοῶν σταδίων/καὶ πατρὸς Μέγα Νεμεαῖον ἄγαλμα.

I bring a Lydian *mitra* patterned with resonant music, a Nemean decoration for the double stadion victories of Deinias and of his father Megas.

*Nemean*, 8.14–16 tr. Bowra

The term ἁρμονία isn’t used here, but τρόπῳ can be considered to be more or less synonymous with it as it is in, for example, ps-Plut. *Mus.* p. 12.37 Ziegler and Bacch. *Isag.* 46, p. 303.3 Jan. According to Anderson (1966, p. 35), “*Tropos* can be largely identified with the kinetic aspect of *Harmonia*.” Cf. *O.* 3.3–6.

the Charites is “harmonious order” and that the harmony then “passes inward and is felt in the Minyan past, but in the present also as shown in wisdom (poetry), personal beauty, or the beauty of act...[and] the beauty of the gods’ pure being.”

The Lydian mode has been associated with Orpheus’ charming of animals and the Amphion stones and Plato bans it from his ideal city in the *Republic* because of its strange and pathetic power, which induces softness in those who hear it. It is possible that there are allusions to the Dorian mode in Pindar’s odes as well as well, but none of the tokens of “Δωρίαν” refer explicitly to a *harmonia*, *tropos* or *melos*, and it is beyond my scope to delve into the textual debates surrounding these instances, since I seek only to establish that Pindar was aware of the existence and variety of *harmoniai* (modes)<sup>21</sup>.

We are on firmer ground when it comes to the Aeolian because, even though the term “*harmonia*” isn’t used, the context is clearly musical:

τὸ Καστόρειον<sup>22</sup> δ' ἐν Αἰολίδεσσι χορδαῖς θέλων/ἄθρησον χάριν

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<sup>21</sup> The relevant passages are: *O.* 1.17–19, *O.* 3.3–9, *P.* 8.19, and fr 191 *M.* In the first case the reference is to a Dorian *phorminx*(...ἀλλὰ Δωρίαν ἀπὸ φόρμιγγα πασσάλου/λάμβαν...), in the second to a Dorian measure (... τρόπον/\_\_\_Δωρίῳ φωνὰν ἐναρμόξαι πεδίλῳ/ ἀγ'λαόκωμον...), in the third to a Dorian victory, and the final fragment is too obscure to even gloss with any ease (Αἰολεὺς ἔβαινε Δωρίαν κέλευθον ὕμνων). None of the usual musical vocabulary that is associated with *harmonia* (*melos*, *tonos*) is used here. Cf. Mathiesen (1976).

<sup>22</sup> The exact meaning of “Καστόρειον” is lost to us. Bowra (1964, p. 19) suggests that this was a tune of Spartan origin, connected with chariot-victories because Castor was regarded as the inventor of the chariot and played an important part as a patron of racing. However, it seems to have been transposed from the Dorian to the Aeolian mode, presumably by Pindar. Bowra (1964) also connects it to *O.* 1.102 — “...ἵππιῳ νόμῳ Αἰοληΐδι μολπᾷ...” (the horseman’s song in Aeolian melody) since the “ἵππιῳ” might be Castor. It is interesting that the game inspired by the song of Castor is mainly devoted to gnomic considerations on the dangers of flattery, slander and envy.



ἑπτακτύπου/φόρμιγγος ἀντόμενος.

The song of Castor on Aeolian strings so please you, look and greet it  
for the sake of my seven-stringed lyre.

*Pythian*, 2.69-71 tr. Lattimore

The *scholia* on this ode reveal that the exact meaning of “*harmonia*” has been the source of debate for centuries — one of the scholiasts used it interchangeably with *rhythmos*, for instance<sup>23</sup>. *Harmonia* could be related to *rhythmos*, *symphōnia*, *melos* (melody, tune) or even to the sound created by an *aulos* (flute), distinct from song. At any rate, it is often associated with one or the other of the later ‘modes’ — Aeolian, Dorian, Lydian.

Our earliest solid evidence for the structure of these modes, however, is in Aristides Quintilianus’ *de Musica*; since he was a writer of the late Empire, we cannot assume that the *harmoniai* as he described them were what Pindar had in mind. We can see, though, that Pindar was aware of the diversity of the *harmoniai* and seemed to associate certain *harmoniai* with certain occasions or moods. He was also aware of the psychological effects of music, seeing the lyre as a vehicle whereby good order can be instilled into the hearts of the people. We will examine this last aspect in some more detail in the following pages.

### III.3 *Harmonia* in human life and conduct

Many of Pindar’s poems exhibit his views on the relationship between civic order

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<sup>23</sup> “τὸ δὲ μέλος Αἰολικῷ ρυθμῷ συνέταξε. ἢ τὸ ποίημα” *Sch. Py. II*, 128a.

*harmonia*, *symphōnia*, and music, generally speaking. *Pythian* I, for instance, is full of musical imagery and it is the song of the lyre that results in peace and good order in Hieron's new city of Aetna. Here, as in *Pythian* 5, he talks about the lyre and not its *harmonia*; the enchanted music of the lyre makes discord sleep. Discord, here, is personified as an eagle which is, itself, a symbol of Zeus. The power of this lyre is evident from the very beginning of the poem when the steps of the dancers are said to "listen" to it and the voices of the singers "obey" the music<sup>24</sup>:

Α' Χρυσέα φόρμιγξ, Ἀπόλλωνος καὶ ἰοπ'λοκάμων / σύνδικον Μοισᾶν  
κτέανον· τᾷς ἀκούει/ μὲν βάσις ἀγ'λαΐας ἀρχά, / πείθονται δ' αἰδοὶ  
σάμασιν/ ἀγησιχόρων ὀπότεαν προοιμίων...

Oh golden lyre<sup>25</sup>, shared possession of Apollo and violet-tressed Muses, to whom the steps, leader of the festivities, listen and whom singers obey when, quivering and giving them their lead, you strike up a prelude... *P.* I.1-3

It is also somewhat unusual that the poem begins with an invocation to the lyre rather than to some divinity: this sets the tone for what is to come, and the music of the lyre

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<sup>24</sup> The connection of the Muses to persuasion would hardly have been surprising to a reader of Hesiod's *Theogony*.

<sup>25</sup> It isn't wholly accurate to translate both *kithara* and *phorminx* as lyre and I acknowledge that I am glossing over some of the nuanced differences between the two words for convenience's sake. They both referred to similar instruments; however, *phorminx* is a stylized, Homeric term, less common in the Classical period, and is a particular *kind* of lyre. The word "*phorminx*" occurs at least 21 times in the *Odyssey* and *Iliad*. It seldom occurs in later texts (with the *scholia* on this poem and others using '*kithara*' interchangeably with '*phorminx*') and more or less ceases to be depicted on vases by the end of the fifth century. The *kithara* is also a kind of lyre and there are various kinds of *kitharai*. I use "lyre" throughout in its broadest sense. See Mathiesen (1999, pp. 235–258) for detailed descriptions of different kinds of ancient Greek lyres.

is both a celebration of Hieron's victory in the chariot races and expressive of a wish for civic harmony. Following the invocation, Pindar describes the music of the lyre as being so powerful that it affects even Zeus' thunderbolt and Ares' spear while putting a dark cloud of sleep over the head of Zeus' eagle; this music manages to exert its power over the gods on Mount Olympus as well and, while it begins quite literally with the lyre, it becomes more and more abstract as the poem progresses, culminating with a musical term being used to designate an orderly, peaceful city:

σύν τοι τίν κεν ἀγητήρ ἀνὴρ, υἱὸς τ' ἐπιτελλόμενος, δᾶμον γεραίρων  
τράποι σύμφωνον ἐς ἡσυχίαν.<sup>26</sup>

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<sup>26</sup> Pierre Chantraine (1968), in his entry on *phōnē*, mentions that it sometimes occurs with the prefixes “*homo-*” and “*sym-*”: he defines the former (*homophōnia*) as “qui parle le même langage, à l’unisson” and the latter (*symphōnia*) as “qui résonne ensemble, harmonieux.” The LSJ, however, defines “*symphōnia*” as unison. I contend that we should follow Chantraine in distinguishing *symphōnia* from *homophōnia* since this contrast of meanings is well borne out by a range of texts.

Let us take the case of the Hippocratic *de alimento*, for instance, where we are told that the periods “*symphōnoi*” for the embryo and its nourishment (37); it wouldn’t make any sense to render “*symphōnoi*” as “come together as one” since the natural meaning is something like “are arranged in a way that is conducive to (the embryo and its nourishment)” or, as most translators render it, “harmonize (for the embryo and its nourishment)”. In *Vict.* 1.8, *symphōnia* is used in a manner that is more or less interchangeable with *harmonia*. One of the earliest uses of *symphōnia* is in the Homeric hymn to Hermes, where the poet describes how Hermes made a lyre; he first affixed reeds of the right length into a tortoise shell and then (49-51):

ἄμφι δὲ δέρμα τάνυσσε βοῶς πραπίδεςσιν ἔησιν,  
καὶ πῆχυς ἐνέθηκ', ἐπὶ δὲ ζυγὸν ἤραρεν ἄμφοϊν,  
ἐπτα δὲ συμφώνους ὄτων ἐτανύσσατο χορδὰς.

Given that the seven-stringed lyre was played in such a manner that its strings were struck successively, it is highly unlikely that *symphōnia* here could mean anything like “unison”. This is not, of course, to say that it didn’t mean “concord”; this is precisely what it means in the first Pythian (69-70), for instance. On the other hand, we can use the example of “*homophōnia*” in Aeschylus’ Agamemnon: “τοῖς δ' ὁμόφωνον/ αἴλινον αἴλινον εἰπέ, τὸ δ' εὖ νικάτω/...” (158-9); it clearly means “unison” here. Meyer (1932, p. 46) links this text to Cratylus 405d and claims a strong kinship between *symphōnia* and *harmonia*; according to him it is a mistake to read *symphōnia* as some kind of “simultane Zusammen tönen”. Even though this last text is Platonic, we have ample evidence from pre-Platonic texts as well that *symphōnia* is, at least in the musical sense, more or less interchangeable with *harmonia*.

For with your [Zeus'] help, a man who is a ruler, and orders his son, in honoring his people could turn them to harmonious peace. (69-70)<sup>27</sup>

The soothing power of these harmonies is also mentioned, *inter alia*, in *Nemean* 4:

οὐδὲ θερμὸν ὕδωρ τόσον γε μαλθακὰ τεύχει/ γυνῖα, τόσσον εὐλογία  
φόρμιγγι συνάορος.

Nor does warm water so much soothe gentle limbs as fine words linked to the lyre. (4-5)

Both *Pythian* 4 and 5 (dedicated to Arkesilas, the tyrant of Cyrene) mention the power of Apollo; this is especially vivid in *Pythian* 5 when Pindar claims that instilling ‘good order’ (*eunomia*), an important political virtue, is one of the functions of the lyre:

Γ' ὃ καὶ βαρεῖαν νόσων/ἀκέσματ' ἄνδρεσσι καὶ γυναιξὶ νέμει,/πόρεν  
τε/κίθαριν, δίδωσί τε Μοῖσαν οἷς ἂν ἐθέλῃ,/ἀπόλεμον ἀγαγών /ἐς  
πραπίδας εὐνομίαν, [...]

[Apollo] it is who dispenses cures for painful diseases to men and women; he has also given them the lyre, granting the Muse to whomsoever he wishes, instilling peace and good order in their hearts[...] *Pythian* 5.63-66 tr. Lattimore

I would like to conclude this section with a consideration of *Pythian* 8 — this is one of the most interesting uses of “*harmonia*” in Pindar’s odes; we have already seen how music affects all of human life (and divine lives as well, according to *P. I*) but in this

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It is narrower in its scope than *harmonia*; however it overlaps significantly with our word in all of its uses. I contend that the difference between *isonomia* and *harmonia* maps on, more or less, to the difference between *homophōnia* and *symphōnia*: *isonomia* and *homophōnia* imply a unison or homogeneity that is not implied either by *harmonia* or *symphōnia*.

<sup>27</sup> For the contrast between war and harmonious *hēsuchia*, see also *N. 9*

ode we have, perhaps, one of the earliest acknowledgements of *harmonia* as a notion that has *cosmological* import.

*Pythian* 8, written for Aristomenes, who won the Pythian wrestling contest, is probably one of Pindar's last poems and 446 BCE is a widely accepted date of composition — this would mean that Pindar was close to eighty when he wrote this poem. It was most likely Pindar's last victory ode as well as the only one that celebrates Aegina (which had lost its independence to Athens in 457 BCE); according to some of the *scholia*<sup>28</sup>, it's quite possible that the *hēsuchia* invoked at the beginning of the poem is a reference to the calm that followed this victory — it seems almost necessary to find some explanation for the invocation of calm at the beginning of an ode celebrating victory in a wrestling contest. We have already seen two instances where the lyre and *symphōnia* are connected to “*hēsuchia*”; here, *hēsuchia* is personified:

Α' Φιλόφρον Ἑσυχία, Δίκας / ὧ μεγιστόπολι θύγατερ, / βουλᾶν τε καὶ  
πολέμων ἔχοισα κλαῖδας ὑπερτάτας / Πυθιονικὸν τιμὰν Ἀριστομένει  
δέκευ.

Oh thought loving *Hēsuchia*, daughter of *Dikē*, of the greatest of city-states,  
you who possess the mighty keys to the counsels and wars, receive for  
Aristomenes the honor of the Pythian victory. *P.* 8.1–3

Pindar follows this invocation with a description of how *Hēsuchia* puts an end to hostile

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<sup>28</sup> See Drachmann (1964) II, 206. The second scholium relates it to the Persian wars and the first to political disturbances in the 35<sup>th</sup> Pythiad, i.e. 446 BCE. Given that the Persian wars ended more than thirty years before 446 BCE, most scholars have opted for the suggestion given in the first scholium. This was, then, most likely a reference to Aegina's defeat.

violence; Zeus (“thunderbolt”) and Apollo, too, subdue their enemies, but Apollo welcomes Aristomenes and his band of revellers. Pindar then offers a series of extravagant praises — first of Aegina, ‘the *polis* of *dikē*’ and then of Aristomenes. Then, we have the invocation to Apollo, beginning at the end of the fourth strophe:

κατά τιν' ἁρμονίαν βλέπειν/ἀμφ' ἕκαστον, ὅσα νέομαι./κώμῳ μὲν  
ἀδυμελεῖ/Δίκη παρέστακε· θεῶν δ' ὅπιν/ἄφθονον αἰτ<έω>, Ξέναρκες,  
ὑμετέραις τύχαις./εἰ γάρ τις ἐσλὰ πέπαται μὴ σὺν μακρῷ  
πόνῳ,/πολλοῖς σοφὸς δοκεῖ πεδ' ἀφ'ρόνων /βίον κορυσσέμεν  
ὀρθοβούλοισι μαχαναῖς·

O Lord, I pray that with a willing mind and with some *harmonia* you look upon each step that I take in my path. *Dikē* presides over the band of revelers with their sweet song. From the gods, ungrudging favor I request, Xenarkes, for your fortunes. If someone has achieved great things without an ordeal, the many think he is wise among ignorant ones, the way he arranges his life with correctly planned stratagems. *P.* 8.67-75. tr. Hubbard (1983)<sup>29</sup>

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<sup>29</sup> The above translation assumes that Apollo is the subject of “βλέπειν” although there has been controversy — dating back to the *scholia* — over whether Apollo or Pindar himself is the subject. One of the reasons for considering Apollo to be the subject is that scholars have assumed that *harmonia* is little more than synecdoche for “song” — music is, after all, one of Apollo’s domains. Some prominent translations do not even translate “*harmonia*”; consider, for instance, Lattimore’s (1947) translation of 8.67-71: “I look on each thing in my course even as you look also. Justice herself stands over sweet singing in celebration...” Hubbard’s (1983, p. 288) more straightforward translation of 8.67-69 is: “With willing mind, O Lord Apollo, do I pray to look according to some *harmonia* concerning each thing, as many things as I come to.” Hubbard (1983) construes “ἐκόντι...νόῳ” with “εὐχομαι” rather than with “βλέπειν” and this is a very natural rendering given the word-order and the fact that “βλέπειν” is technically part of the antistrophe whereas “ἐκόντι δ' εὐχομαι νόῳ” is part of the strophe. He also points out that, in other Pindaric odes where exhortation is used (*N.* 8, 9, *P.* 11), no real action is required on the part of the deity and “they are merely rhetorical (exhortations), invoking the god as a witness to the propriety of the poet’s own behavior” (289).

The preceding strophe begins “τὸ δ', Ἑκαταβόλε<sup>30</sup>, πάνδοκον...”, which gives us the central point of the ode — the “far-shooter” Apollo controls athletics as well as arts, so it is meet that he be invoked here. I am primarily concerned with explaining what Pindar might have meant by “τὴν ἁρμονίαν” in this context. I argue, along with Hubbard, that we oughtn’t interpret “*harmonia*” as nothing more than synecdoche for “song”. Further, we needn’t assume the meaning of *harmonia* here is straightforwardly musical. By Pindar’s time “*harmonia*” was already being used in a more abstract sense — as we saw in the previous section, his predecessor Homer used it to mean “agreement” and we will see, in the next section, how his near contemporary, Heraclitus, took it to cosmological heights. It is not unreasonable to posit that Pindar, too, might have been invoking a more abstract *harmonia* in this ode.

It seems that Pindar is entreating with Apollo that he, the poet, may look with “*harmonia*” at the path ahead of him. The fact that this is “τὴν ἁρμονίαν” and not just “ἁρμονίαν” could also be a clue to the fact that “*harmonia*” is not being used in its usual sense. If we pay attention to the positioning of *harmonia* in this ode, we find the word at the very end of the strophe — “*harmonia*” makes the seemingly tense interstrophic crossover more consistent, reflecting, perhaps Pindar’s poetics. As Michel Briand (2010,

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<sup>30</sup> It is common in ancient Greek prayer for the ritual name of the god to be given first, hence the old Homeric epithet of “*hekatobolos*”; other names for Apollo include *smintheus* (Homer) and “*athanata*” (Sappho).

pp. 114–116) has argued, the poetic art, for Pindar, involves the harmonizing of words, an activity that is analogous to weaving of cloth or to architectural construction. So here is one kind of *harmonia* — that which is a part of the craft of the poet. Let us consider, next, the content of this poem — it is a celebration of achievement resulting from violent conflict, both with respect to the wrestling match and (if the scholiasts are right) the peace that followed Athens’ subjugation of Aegina; it is fitting that the poet look upon these with “*harmonia*,” which is, as we have already seen, often the positive product of conflict between entities that are in opposition or in tension.

In the lines that follow the passage above, measure and order are mentioned yet again when we are told that the *daimōn* exalts some men and brings others down according to *metron* (due measure). Being exalted and brought down again are not the only opposites that Pindar mentions — Helion’s enemies are in a state of restless ill-will (ἀμείλιχος κότος, 8-9) while victory ushers in a calm epoch (μείλιχος αἰών, 97); someone may be perceived as wise (σοφός, 75), but relative to those who are ignorant (ἄφ'ρόνων, 75); for some the Pythian games involve pleasurable *nostos*, for other bad fortune (84); the pleasure gained by mortals waxes quickly and then wanes with the same speed (92-3); mortals are creatures of shade (σκιά), but are given brightness (αἴγλη) by Zeus that then brings bright light (λαμπρός φέγγος) into their lives (95-7); Zeus is also responsible for giving a long life span (αἰών, 97) to the ephemeral



mortals<sup>31</sup> (ἐπάμεροι, 95).

It is, of course, difficult not to think of Heraclitus when one invokes *harmonia* in connection with opposites and there are, indeed, some striking similarities between Pindar and Heraclitus. Hubbard (1979) offers an illuminating discussion of some of these affinities (both philosophical and stylistic, insofar as the two can be meaningfully separated). We have ample evidence, for instance, that polar opposites are fundamental to the thought of both Heraclitus and Pindar, and the presence of these opposites is characterized by a kind of dialectical irresolution. Hubbard uses the case of *Nemean 3* to show how the opposition as a whole tends to be “ambivalent, successively privileging either pole and thus sustaining them in perpetual tension...” This description could quite easily be adapted to characterize Heraclitus’ views on the nature of opposites in the *kosmos*, to which I now turn.

#### IV. Heraclitus

For Heraclitus, ‘*harmonia*’ comes to stand for more than just musical mode, or a goddess, or a vague metaphor — one could argue, in fact, that is one of the central conceptual schemes in his cosmology. He often speaks of pairs of opposites as “*to auto*” (the same) or “*hen*,” (one) and a proper understanding of this doctrine of unity can help

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<sup>31</sup> Cf. Hom. *Od.* 21.85 — “ἐφημέρια φρονέοντες”

us recognize the explanatory force of some of the most perplexing formulations of *hokoteinos*. I argue, in this section, that the concept of *harmonia* is key to understanding this doctrine<sup>32</sup>.

The coherence of Heraclitus' claim that "ὁμολογεῖν σοφόν ἐστὶν ἐν πάντα εἶναι" ("it is wise to agree that all things are one," DK22 B50) is often explained by drawing a distinction between Heraclitus' expression and his intention. Various interpreters have tried to explain what his formulations about the identity of opposites really meant because taking them at face value would require us to agree with Aristotle (*Metaph.* 1005b) in viewing them as a violation of the law of contradiction<sup>33</sup>. It is beyond the scope of this chapter to enter into a discussion of these various interpretations; I offer but one manner in which we can understand his claim about the unity of all things. My goal in this chapter is to show what *harmonia* meant for Plato's predecessors. In the case of Heraclitus, though, it is not possible to demonstrate the heights to which he took the notion without a more general discussion of his cosmology.

There are three tokens of *harmonie* in the Heraclitean corpus — in DK22 B54, DK22 B51, and DK22 B8. Heraclitus claims that the hidden attunement (ἁρμονίη

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<sup>32</sup> I should say that I use the word 'doctrine' with the appropriate reservations — far too many interpretations of Heraclitus have suffered from a Stoicized reading and I am keen to avoid this.

<sup>33</sup> See, for example, Kirk (1954, p. 95), Barnes (1983), Guthrie (1979, p. 443), and Marcovich (2001, pp. 158–159).

αφανής) is better than the obvious one (DK22 B54) and we can better understand what hidden and apparent harmonies are by turning to fragments such as DK22 B51 where the image of the lyre is a striking illustration of the harmony of things in tension:

οὐ ξυνιᾷσιν ὅκως διαφερόμενον ἐωυτῷ ὁμολογέει· παλίντροπος  
ἁρμονίη ὅκωσπερ τόξου καὶ λύρης.

They do not comprehend how a thing agrees at variance with itself; it is a *harmoniē* turning back on itself, like that of the bow and the lyre.

The opposites here are ‘διαφερόμενον’ (disagree) and ‘ὁμολογέει’ (agree). The bow and the lyre are the key to understanding how things that are at variance can agree. We can understand the *harmoniē* as the consonance created when strings in tension come together to create ‘harmony’ in the musical sense. But the common translation of ‘attunement’ doesn’t capture the full sense of *harmoniē*<sup>34</sup>. Both the bow and lyre illustrate the unity of entities in tension on account of their shape as well: they are similarly constructed and contain at least one string that is in tension. The tension between the string and the frame in both the bow and the lyre shows how something being stretched apart also comes together in a productive way. Both the duality and the unity of opposites as well as the importance of balance are clearly brought out in this fragment.

Further, as Jane Snyder (1984, p. 93) comments, the shape of the bow and of the

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<sup>34</sup> Hussey’s (1999) non-literal translation of DK22 B54 captures an important and oft overlooked aspect of *harmoniē*: “Latent structure is master of obvious structure”.

lyre illustrates the unity of the opposites in yet another way. The hunting bow can either be shaped like a curved ‘M’ or it can be an arc; the string is fixed on both sides of the frame. The lyre, too, describes an arc. The frame of the lyre, as shown in 6th and 5th century vase paintings, is curved in depth in addition to curving outwards – we can see this in depictions of the side of the lyre. We are accustomed to front or back views of the lyre but this side view of the lyre shows the outward curve. Both describe arcs of circles and, as Heraclitus states in DK22 B103, a circle exemplifies how opposites (beginning and end) are common.

Finally, we mustn’t neglect the role of Apollo in this fragment. Both the bow and lyre have been associated with Apollo — the Homeric hymn to Apollo (131) describes him as master of the κίθαρις (lyre) and the καμπύλα τόξα (curved bow). Apollo embodies pairs of opposites as well — his instrument is the bow (*bios*) and, as DK22 B48 tells us, its name is life (*bios*) but its work is death. Apollo is the god of healing but he also uses his bow to send premature death to men (cf. *Od.* 7.64); he sends the plague (*Il.* 1.44–52), but he is also able to cure it. He is also shown to be figure both of concealment and revelation — Heraclitus describes him as the god who neither declares nor conceals, but gives signs (DK22 B93). In the figure of Apollo, we have a harmony similar to that of the bow, i.e. a harmony between opposing attributes of the same entity. The harmony of the bow and lyre is a musical harmony, a physical harmony, and also a sign of harmony between opposites like life and death and

concealment and revelation in light of the relation to Apollo.

The context in which DK22 B51 is given to us might also prove enlightening.

Hippolytus quotes it just after DK22 B50:

οὐκ ἐμοῦ, ἀλλὰ τοῦ λόγου ἀκούσαντας ὁμολογεῖν σοφόν ἐστὶν ἐν πάντα εἶναι.

Listening not to me, but to the *logos*, it is wise to agree that all is one.

B50 indicates that wisdom consists in comprehending unity and DK22 B51 reproaches people for being uncomprehending (echoing, inter alia, DK22 B15, DK22 B20, DK22 B23, and DK22 B104) of the fact that even things that appear to be in tension are harmonized. Then, Hippolytus quotes DK 51 again before quoting DK 54 (the hidden harmony is better than the obvious one). We are told that Heraclitus claimed that wisdom consisted in agreeing that all things were one (DK 50), that one ought to understand how something at variance agrees with itself in terms of the *harmonīē* of the bow and lyre (DK 51), and then we are told that a hidden *harmonīē* is superior to an obvious one (DK 54). The fragment (DK 51) presents us with a paradox and it is up to us to uncover the real meaning behind it; we must pay attention to the invisible harmony.

This invisible harmony is, perhaps, the metaphysical organization that underlies the world of sense-experience. There is an obvious unity in experience, but there is also a unity in reality. Heraclitus probably objected to the so-called Pythagorean belief

in the sounding of spheres — this is an obvious *harmonīē* — but pointed out the hidden *harmonīē*, which is the *harmonīē* of opposed entities that underlies all change. We have seen that the only prerequisite for *harmonīē* is the existence of two opposed or conflicted entities that can somehow be brought into balance : these are the so-called opposites, which are not all, strictly speaking, opposites but all are conflicting entities or conflicting aspects of a singular entity.

It should be also be emphasized that tension and conflict is necessary for *harmonīē* as Heraclitus conceives of it. He emphasizes the role of strife and war since nothing would exist in the absence of separation and tension; after all, “Πόλεμος πάντων μὲν πατήρ ἐστι[...]

τὸ ἀντίξουν συμφέρον καὶ ἐκ τῶν διαφερόντων καλλίστην ἁρμονίαν  
καὶ πάντα κατ' ἕριν γίνεσθαι

What opposes brings together and out of things bearing in different directions [comes] the finest *harmonīē* and all comes to be by strife.

DK22 B8

Strife is necessary because harmony comes about through strife<sup>35</sup> and some kind of

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<sup>35</sup> Some ancient Chinese thinkers held a similar view on the nature of harmony (和, *he*). Shi Bo, a pre-Confucian scholar-minister who lived around 1066 BCE is reported to have said (according to the *Guoyu*) that “harmony (*he*) is indeed productive of things but sameness does not advance growth (*ji*). Smoothing one thing with another is called harmony. For this reason things come together and flourish. If one uses the same thing to complement the same thing, it is a dead end and becomes wasted [...] a single sound is nothing to hear, a single color[?] (*Wu se ye*) does not make a pattern, a single taste does not satisfy the stomach, and a single item does not harmonize.”

The same text also connects harmony to number — harmony obtains between five elements (Earth, Metal, Wood, Water, and Fire) and involves the balancing of five flavors of taste; there are four limbs in the body, six measures of sound, seven parts of the body involved in the heart/mind

disturbance or violence is necessary for maintaining the harmonized order of things:

καὶ ὁ κυκεὼν δίσταται <μὴ> κινούμενος.

The potion not stirred separates.  
DK22 B125

Even Aristotle seemed to have been aware of this aspect of Heraclitus thought:

καὶ Ἡράκλειτος ἐπιτιμᾷ τῷ ποιήσαντι “ὥς ἔρις ἔκ τε θεῶν καὶ ἀνθρώπων ἀπόλοιτο,” οὐ γὰρ ἂν εἶναι ἁρμονίαν μὴ ὄντος ὀξέος καὶ βαρέος, οὐδὲ τὰ ζῶα ἄνευ θήλεως καὶ ἄρρενος ἐναντίων ὄντων.

And Heraclitus criticizes the poet who wrote “if only strife would perish among gods and mortals,”<sup>36</sup> because he says that *harmonia* would not exist were there not a high and a low note, or life without the female and male sexes which are opposites. DK22 A22/ EE 1235a 25–7

Opposites *in a state of strife* along with a principle that balances them are both essential components of Heraclitus’ cosmos.

Even though “*harmonia*” is more than a merely musical idea for Heraclitus, he also borrows from music to explain how *harmonia* functions in the *kosmos*. DK22 B10 is one of the most interesting fragments in this context, even though Heraclitus doesn’t explicitly mention *harmonia*:

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balance and eight in the whole person, nine social rules for pure virtues, and, finally, ten social offices for the regulation of the multitude. In all these cases, harmony out of *diversity* is of prime importance.

<sup>36</sup> Hom. *Il.* 18.107

Συνάψεις<sup>37</sup>. ὅλα καὶ οὐχ ὅλα, συμφερόμενον διαφερόμενον, συνᾷδον  
διᾷδον, καὶ ἐκ πάντων ἓν καὶ ἐξ ἑνὸς πάντα.

Connections. Whole and not whole, coming together and going apart,  
singing together and singing apart, one out of many and all out of one.

There are manifest musical ideas in this fragment. It is also one of the richest, and most puzzling, fragments pertaining to the unity of opposites and indeed to the unity of all things. Even though most of our evidence regarding the first word is significantly later than Heraclitus, it seems that *synapsis* implies connection and, more specifically, a connection that involves unity; the cognate verb, *synhapto*, means to join together. *Synapsis* also refers to conjunct tetrachords and Shipton (1985, p. 115) draws attention to the cognate form ‘*synaphē*,’ which has the general meaning of ‘union’ and the more specific meaning of the ‘conjunction’ or ‘contact’ of two tetrachords on a lyre.

Seventh century vase paintings show seven stringed lyres in which the middle string was shared by the two tetrachords. A tetrachord consists of four notes played successively and the ancient Greeks recognized three genera of tetrachords: diatonic, enharmonic, and chromatic, the details of which needn’t concern us here. What is relevant is the fact that the two outer notes – the lowest and highest – in a tetrachord were fixed whereas the inner two notes could fluctuate. Now, when conjoint

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<sup>37</sup> There is disagreement about how to read this and Kahn (1979), Marcovich (2001), and Kirk (1953) all opt for συλλάψεις. It is beyond my scope to enter into details about this conflict. I follow the text of Diels-Kranz and am convinced by Shipton’s (1985) arguments.



tetrachords were played, the highest note of the first tetrachord would become the lowest note of the second – *synaphē* refers to this point of contact between the two tetrachords. Let us return to DK22 B10.

Shipton (1985) argues that we can interpret the fragment in light of the structure of the seven-stringed lyre. The tetrachords themselves are οὐχ ὅλα (not whole) but, together, they are ὅλα (whole). The shared string is where the two tetrachords come together, but it can also be seen as the point from which they diverge from one another. συνᾱιδον and διᾱιδον could refer to harmonious and non-harmonious intervals as well as the sounding together of tetrachords and the separate sounding of each tetrachord. The two tetrachords made up an octave, and musical writers often called the octave '*hē dia pasōn*' – it is the structure which involves all the strings. Out of all the strings we have one octave and within the one octave we have all the strings that constitute it. The harmony, in this fragment, can be said to have a specifically musical meaning, brought out by the concept of '*synaphē*.' The obvious *harmonia* discussed here is a metaphor for a deeper harmony– that of disparate entities in the *kosmos*.

Harmonious sound arises because of the different sounds of the tetrachords just as all things in the universe come to be through strife. In the absence of tetrachords in tension, there would be no harmony and one tetrachord is incomplete and meaningless without the other; similarly, when it comes to pairs that are in conflict, one couldn't

exist without the other. If one took away sickness, health would mean nothing. One is necessary for the other. Tetrachords are also struck successively, not simultaneously; first one dominates and then the other in order to create a harmony. Similarly, one of the pairs has mastery at one time and the other at another in order to maintain unity.

The *harmoniē* described by Heraclitus is dynamic rather than static. It is important that we note this both because it differs from other Presocratic conceptions of *harmoniē*, to which I turn in the following sections, and because Heraclitus is the only pre-Platonic philosopher to be explicitly invoked in connection with *harmoniē* in the Platonic corpus, during Erixymachus' discourse in the *Symposium*.

## V. Empedocles

Empedocles' universe consists of the four elements (*rhizōmata*) being controlled by the cosmic principles of Love (*philōtēs*) and Strife (*neikos*); Love unites the elements and Strife forces them apart. In the final stage of development, because of Love all things come together “ἐν μόνον εἶναι” (DK31 B35.5) — there is complete unity of the elements in the form of a homogenous sphere, with Strife left completely outside the sphere (DK31 B17, 27). Empedocles describes the current ordered universe as being at a point where Love predominates but Strife nonetheless presents enough resistance to prevent all things from becoming homogenized. Some elements are mixed and some aren't. When Strife prevails, however, there is a complete separation of the elements

(DK31 B35). Love integrates living organisms while Strife disintegrates them (DK31 B20).

Since Love is the principle that joins the elements, eventually resulting in total fusion, we can see why almost every commentator from Plutarch onwards has unhesitatingly identified Love (*philotēs*) with Harmoniē (*harmoniē*) in fragments such as DK31 B27:

ἔνθ' οὐτ' ἡελίοιο διείδεται ὠκέα γυῖα  
[...]  
οὕτως Ἀρμονίης πυκινῶι κρύφωι ἐστήρικται  
Σφαῖρος κυκλοτερὴς μονίῃ περιηγεί γαίων.

then were not described the swift limbs of sun [...] thus it was set in place with the tight covering of *harmoniē*, a rounded sphere rejoicing in circular solitude.

Another fragment (DK 122) mentions “Δῆρις θ' αἵματόεσσα καὶ Ἀρμονίη θεμερῶπις” in a list of pairs of opposites — Plutarch and Simplicius both claimed that “*Dēris*” and “*Harmoniē*” are, respectively, equivalent to “*Neikos*” and “*Philotēs*” and contemporary commentators, such as Wright (1981) and Inwood (2001), have followed suit. It is undoubtedly tempting to view *harmoniē* as something that binds the elements together, just like Love. Indeed, Empedocles even describes *harmoniē* as a kind of glue (*kolla*):

ἢ δὲ χθὼν ἐν εὐτύκτοις χοάνοισι  
τὰς δύο τῶν ὀκτὼ μοιράων λάχε Νήστιδος αἰγλης,  
τέσσαρα δ' Ἡφαίστοιο· τὰ δ' ὅστέα λευκὰ γέγοντο  
Ἀρμονίης κόλλησιν ἀρηρότα θεσπεσίησιν.

Pleasant earth in well-wrought crucibles got two parts of glittering Nestis, out of its eight parts, and four from Hephaestus; and white bones were produced, joined by the wondrous glue of *harmonīē*.  
DK31 B96

However, we oughtn't be so quick to accept the standard interpretation of the Empedoclean notion of *harmonīē*. For one, we mustn't lose sight of the earlier meanings of the term and the other contexts for its usage. *Harmonīē* certainly joins disparate entities together, but it doesn't unify them completely. Two planks of wood are bound together by *harmonīē* but they aren't fused into one. Second, even the goddess Harmonia was the *product* of the union of Aphrodite (Love) and Ares (Strife). Furthermore, this is nothing like any other notion of *harmonīē* that we have discussed above — that, of course, isn't sufficient to show that Empedocles couldn't have conceived of *harmonīē* as a homogenizing principle, but it should at the very least give us reason for pause. Finally, it isn't even clear that all of Empedocles' fragments depict *harmonīē* as being equivalent to Love. Let us begin by reconsidering DK31 B96, quoted above.

This fragment is remarkable for presenting us with one of the earliest instances of *harmonīē* being used in a case of explicitly numerical proportion — bone is made out of earth, fire, and water in a ratio of 2:4:2. So *harmonīē* stands for mixing in a particular proportion — there is balance and not complete unity or merging. Aristotle, in *De*

*Generatione et Corruptione*, speaks of Empedoclean elements being placed together side by side (*synkeimai*):

ἀνάγκη γὰρ σύνθεσιν εἶναι καθάπερ ἐξ πλίνθων καὶ λίθων τοῖχος·  
καὶ τὸ μίγμα δὲ τοῦτο ἐκ σωζομένων μὲν ἔσται τῶν στοιχείων, κατὰ  
μικρὰ δὲ παρ' ἄλληλα συγκειμένων. Οὕτω δὴ σὰρξ καὶ τῶν ἄλλων  
ἕκαστον.

They must conceive it as composition — just as a wall comes-to-be out of bricks and stones; and this mixture will be composed of elements, these being preserved in it unaltered but with their small particles juxtaposed each to each. That will be the manner, presumably, in which flesh and every other compound results from the elements.  
GC, 334a 26–30

If the harmonious blending of the elements is likened to the construction of a wall out of individual bricks and stones, this gives us even more reason to understand *harmoniē* as a proper fitting together of discrete entities that do not simply blend into one another. Further, as in the case of Homer, the use of the verb *arariskō* draws attention to the physical meaning of *harmoniē*. We can turn to yet another fragment for a similar usage:

[...] οἷτ' ἐπεὶ οὖν μάρψωσι πολύχροα φάρμακα χερσίν,  
ἁρμονίῃ μείξαντε τὰ μὲν πλέω, ἄλλα δ' ἐλάσσω,  
ἐκ τῶν εἶδεα πᾶσιν ἀλίγκια πορσύνουσι,  
δένδρεά τε κτίζοντε καὶ ἀνέρας ἠδὲ γυναῖκας  
θῆρας τ' οἰωνούς τε καὶ ὕδατοθρέμμονας ἰχθῦς  
καὶ τε θεοὺς δολιχαίωνας τιμῇσι φερίστους·

[...] and so when they take pigments of various colors in their hands, mixing them in *harmoniē*, some more, some less, from them prepare forms resembling all things, making trees, men, women, beasts, birds

water-nourished fish, and long-lived gods that are foremost in honors.  
DK31 B23

This fragment likens the work of painters to the effects of Love and Strife on the four elements — Empedocles even uses dual forms to describe the work of the painters (*meizante*, *ktizonte*), and this serves to emphasize the analogy to Love and Strife. In an article on Empedocles and painting, Ierodiakanou (2004) cites a range of sources, including Pliny (*N.H.* 35.50), Cicero (*Brutus* 18.70), and Plutarch (*De. def. or.* 436B-C), in support of her assertion that the only colors used in antiquity were white from Melos, Attic yellow, red from Sinope, and lamp black (91). She goes on to clarify:

‘Mix’ is not used in the sense of completely blending pigments of various colours to produce new hues, but in the sense of arranging pigments side by side in order to realistically portray the world.<sup>38</sup> It seems that this was exactly the practice followed by painters of the fifth century BC...They drew an outline, filled it with a colour, and then juxtaposed washes of different colours on top; different shades were produced by superposing layers of colour rather than blending in advance.

Fragment 123 problematizes the standard reading of Empedoclean *harmoniē* in two ways. First, if Love and Strife are “mixing in *harmoniē*,” it is not coherent to equate ‘*harmoniē*’ with Love just as it would be incoherent to equate the ‘juxtaposition’ with painters. Second, if the style of painting that Empedocles was aware of did *not* involve

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<sup>38</sup> See Kranz (1912), Richter (1944), and Devambez (1962) for more evidence on the use of pigments by archaic Greek painters.

blending of colours and he refers to a juxtaposition of components when he talks about ‘mixing in *harmoniē*,’ *harmoniē* cannot just be like Love since Love blends and homogenizes the entities it acts upon. We have yet another fragment that uses a cognate of *harmonia* and lends support to my reading:

εἰ δέ τί σοι περὶ τῶνδε λιπόξυλος ἔπλετο πίστις, / πῶς ὕδατος γαίης τε  
καὶ αἰθέρος ἡελίου τε/ κίρναμένων εἶδη τε γενοίατο χροῖά τε θνητῶν/  
τόσσ', ὅσα νῦν γεγάασι συναρμοσθέντ' Ἀφροδίτῃ ...

If your faith concerning these things is feeble, how from water and earth and aether and the sun mixed were born forms and colours of mortals, those that have been fitted together by Aphroditē... B71

The word used for the actions of Aphrodite, who must here refer to the cosmic principle of ‘Love,’ (see B17.24) is “συνάρμοσις”; Aphrodite is also described as joining parts together to create the “earth and the sky and the sea” in fragment B22.

If we take these fragments in conjunction with B96, it is much more reasonable to understand “mixing in *harmoniē*” as ‘mixing in an proportionate and fitting way’. Indeed, this may well be the state of affairs described in fragments like DK 35, when Love and Strife are optimally balanced for the existence of the world as we know it, partly mixed and partly unmixed, since the prevalence of either extreme would result in the destruction of our world.

*Harmoniē* isn’t as central a cosmological principle for Empedocles as it was for Heraclitus. Those who have claimed that this is the case tend to equate *harmoniē* with

Love and, while both serve to bind discrete entities, there are important differences in how they do so. Love is just the force that simply fuses, eventually to excess; *harmoniē*, on the other hand, doesn't refer to just *any* fitting but to a *proper* fitting together, as I have argued above. The harmonizing activity of the painters is an excellent example of the manner in which *harmoniē* fuses — alternating colors and creating unity while at the same time separating out elements to create icons (*eidea*) of what is represented<sup>39</sup>. Philolaus certainly had such a notion of fitting together in mind, but he understood *harmoniē* as a cosmological principle with a close connection to a mathematical-musical system of ratios.

## VI. Philolaus

Philolaus of Croton was born around 470 BCE and died around 390 BCE<sup>40</sup>. He has been called a 'Pythagorean' by many and ancient slander even attributed parts of Plato's

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<sup>39</sup> For more arguments in support of this reading of Empedoclean 'harmony,' see Ierodiakanou (2005, pp 4-10).

<sup>40</sup> One cannot date the fragments of Philolaus with certainty. According to Huffman (1993, p. 1), Plato's remarks in the *Phaedo* (61 d) are significant — Philolaus was heard by Simmias and Cebes at Thebes, so that places him sometime before 399 BCE, the dramatic date of the *Phaedo*. Huffman continues that Philolaus must have been at least forty years old to have been the teacher of Simmias and Cebes, so 440 BCE becomes the *terminus ad quem* for his death. Of course, he may have been born significantly before that. Huffman (1993, p. 5) concludes, on the basis of various *testimonia*, that he must have been born around 470 BC. For my purposes, it is sufficient to establish that his fragments predate the writings of Plato.



*Timaeus* to him<sup>41</sup>. I will not dwell further on biographical details; whether or not he was a ‘Pythagorean’ is material for a different book, and one that has already been written (Huffman, 1993). I will instead limit myself here to a close reading of some of the extant fragments of Philolaus. While we have little reason to give credence to reports of Plato’s supposed plagiarism from Philolaus, many of Philolaus’ views seem to have influenced Plato’s discussion of *harmonia* in the *Timaeus* and also in the *Philebus*; it is important, then, that we be as clear as we possibly can about Philolaus’ doctrines.

Five fragments of Philolaus are of particular interest to anyone wishing to understand his doctrine of *harmonia*: DK44 B1, DK44 B2, DK44 B6, DK 44B6a, and DK44 B10. Let us begin by considering Fragments 1 and 2:

Περὶ φύσεως ὧν ἀρχὴ ἦδε· <ἅ φύσις δ' ἐν τῷ κόσμῳ ἀρμόχθη ἐξ ἀπείρων τε καὶ περαινόντων, καὶ ὅλος <ὁ> κόσμος καὶ τὰ ἐν αὐτῷ πάντα.

Nature in the world order (*kosmos*) was fitted together both out of things which are unlimited and out of things which are limiting, both the world order as a whole and all the things in it<sup>42</sup>. B1

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<sup>41</sup> See, for instance, *DL* 8.7: Γέγραφε δὲ βιβλίον ἓν, ὃ φησιν Ἑρμιππος λέγειν τινὰ τῶν συγγραφέων Πλάτωνα τὸν φιλόσοφον παραγενόμενον εἰς Σικελίαν πρὸς Διονύσιον ὠνήσασθαι παρὰ τῶν συγγενῶν τοῦ Φιλολάου ἀργυρίου Ἀλεξανδρινῶν μνῶν τετραράκοντα καὶ ἐντεῦθεν μεταγεγραφέναι τὸν Τίμαιον. Cicero also has Scipio claim that Plato got his hands on Philolaus’ notes: *Platonem Socrate mortuo primum in Aegyptum discendi causa, post in Italiam et in Siciliam contendisse, ut Pythagorae inventa per-disceret... et Philoleo commentarios esse nactum...* (I.x)

On the other end of the spectrum, we have those who cast doubt upon the authenticity of Philolaus’ extant fragments, claiming that they are a late forgery based on the *Timaeus*; see Huffman (1993, pp. 149–50) on why such a view is highly implausible.

<sup>42</sup> All translations of Philolaus are after Huffman (1996)

Ἐκ τοῦ Φιλολάου περὶ κόσμου. <ἀνάγκα τὰ ἐόντα εἶμεν πάντα ἢ περαίνοντα ἢ ἄπειρα ἢ περαίνοντά τε καὶ ἄπειρα· ἄπειρα δὲ μόνον <ἢ περαίνοντα μόνον> οὐ κα εἶη. ἐπεὶ τοίνυν φαίνεται οὐτ' ἐκ περαινότων πάντων ἐόντα οὐτ' ἐξ ἀπείρων πάντων, δῆλον τᾶρα ὅτι ἐκ περαινότων τε καὶ ἀπείρων ὅ τε κόσμος καὶ τὰ ἐν αὐτῷ συναρμόχθη. δηλοῖ δὲ καὶ τὰ ἐν τοῖς ἔργοις. τὰ μὲν γὰρ αὐτῶν ἐκ περαινότων περαίνοντι, τὰ δ' ἐκ περαινότων τε καὶ ἀπείρων περαίνοντί τε καὶ οὐ περαίνοντι, τὰ δ' ἐξ ἀπείρων ἄπειρα φανέονται

(1) It is necessary that things be all either limiting, or unlimited, or both limiting and unlimited (2) but not in every case unlimited alone. (3) Well then, since it is manifest that they are neither from limiting things alone, nor from unlimited things alone, it is clear then that the world-order and the things in it were fitted together from both limiting and unlimited things. (4) Things in their actions also make this clear. (5) For, some of them from limiting limit, others from both limiting and unlimited both limit and do not limit, others from unlimited will be manifestly unlimited. B2, tr. Huffman

The building blocks of Philolaus' universe are unlimited things and limited things — entities with derivative reality are then of three kinds: limited limiteds, unlimited unlimited, and limited unlimiteds<sup>43</sup>. Unlimited things and limited things need to be joined together in order for the *kosmos* to come about and the two fragments quoted above are connected because the terms for “fitting together in an orderly way” are the verbs “*harmochthe*” and “*sunharmochthe*” (cognates of *harmonia*); Philolaus does not make

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<sup>43</sup> It is beyond my scope to enter into a detailed discussion of what these ‘limiters’ and ‘unlimiteds’ might be — Burkert (1972, p. 258) understands them as atoms and void (1983, p. 326) and Schofield (1983, p. 326) takes them to be odd and even numbers. I follow Huffman (1993) and Graham (2014, pp. 52–55) in construing them as broadly as possible. Graham (*ibid.*) offers a brief yet excellent discussion of limiters and unlimiteds in Philolaus' ontology. See also Huffman (1999) for a general discussion of the notions of ‘limit’ and ‘unlimit’ in Greek thought.

use of the substantive “*harmonia*” in these fragments, but merely points out that there exists a relationship between *ta apeira* (unlimited things) and *ta perainonta* (limited things). The substantive — *hē harmonia* — is introduced in Fragment 6:

περὶ δὲ φύσιος καὶ ἁρμονίας ὧδε ἔχει· ἃ μὲν ἐστὼ τῶν πραγμάτων αἰδῖος ἔσσα καὶ αὐτὰ μὲν ἃ φύσις θείαν γὰ καὶ οὐκ ἀνθρωπίνην ἐνδέχεται γινῶσιν πλέον γὰ ἢ ὅτι οὐχ οἷόν τ' ἦν οὐθὲν τῶν ἐόντων καὶ γιγνωσκόμενον ὑφ' ἁμῶν γὰ γενέσθαι μὴ ὑπαρχούσας τὰς ἐστοῦς τῶν πραγμάτων, ἐξ ὧν συνέστα ὁ κόσμος, καὶ τῶν περαινόντων καὶ τῶν ἀπείρων. ἐπεὶ δὲ ταὶ ἀρχαὶ ὑπάρχον οὐχ ὁμοῖαι οὐδ' ὁμόφυλοι ἔσσαι, ἤδη ἀδύνατον ἦς κα αὐταῖς κοσμηθῆναι, εἰ μὴ ἁρμονία ἐπεγένετο ὠιτινῶν ἅδε τρόπῳ ἐγένετο. τὰ μὲν ὧν ὁμοῖα καὶ ὁμόφυλα ἁρμονίας οὐδὲν ἐπεδέοντο, τὰ δὲ ἀνόμοια μὴδὲ ὁμόφυλα μὴδὲ ἰσοταγῇ ἀνάγκα τὰι τοιαύται ἁρμονίαι συγκεκλειῖσθαι, οἷαι μέλλοντι ἐν κόσμῳ κατέχεσθαι.

Concerning nature and harmony the situation is this: the being of things, which is eternal, and nature in itself admit of divine and not human knowledge, except that it was impossible for any of the things that are and are known by us to have come to be, if the being of the things from which the world-order came together, both the limiting things and the unlimited things, did not preexist. But since these beginnings preexisted and were neither alike nor even related, it would have been impossible for ‘them’ to be ordered, if a harmony had not come upon them, in whatever way it came to be. Like things and related things did not in addition require any harmony, but things that are unlike and not even related nor of [? the same speed], it is necessary that such things be bonded together by harmony, if they are going to be held in an order. B6

This fragment introduces *harmonia* as a central principle in Philolaus’ cosmology but also creates a puzzle about its ontological status. It’s not clear whether *harmonia* is (1) the product of the principles *peras* and *apeiron* or whether it is (2) some pre-existing

metaprinciple that ‘supervenes’ upon limited things (*ta perainonta*) and unlimited things (*ta apeira*) in order to join them together or whether it is (3) some kind of Empedoclean cosmic glue that preexists everything else.

De Vogel (1966) reads *harmonia* as a kind of metaprinciple that orders the principles *apeira* and *perainonta* and claims that, “together with number, “harmony” is also mentioned by Aristotle as being a fundamental cosmic principle, a doctrine which we find clearly stated in the fragments of Philolaus” (1966, p. 4). Aristotle does, indeed, claim that, for the Pythagoreans, mathematical principles are the principles of all things:

Ἐν δὲ τούτοις καὶ πρὸ τούτων [Leucippus and Democritus] οἱ καλούμενοι Πυθαγόρειοι τῶν μαθημάτων ἀψάμενοι πρῶτοι ταῦτα προήγαγον, καὶ ἐντραφέντες ἐν αὐτοῖς τὰς τούτων ἀρχὰς τῶν ὄντων ἀρχὰς εἶναι πάντων.[...] ἐπεὶ δὴ τὰ μὲν ἄλλα τοῖς ἀριθμοῖς ἐφαίνοντο τὴν φύσιν ἀφωμοιῶσθαι πᾶσαν, οἱ δ' ἀριθμοὶ πάσης τῆς φύσεως πρῶτοι, τὰ τῶν ἀριθμῶν στοιχεῖα τῶν ὄντων στοιχεῖα πάντων ὑπέλαβον εἶναι, καὶ τὸν ὅλον οὐρανὸν ἀρμονίαν εἶναι καὶ ἀριθμόν·

At the same time and even earlier than Leucippus and Democritus the so-called Pythagoreans applied themselves to mathematics and were the first to develop this science and through studying it they came to believe that its *archai* are the *archai* of everything [...] and since it seemed clear that all other things have their whole nature modeled upon numbers, and that numbers are the ultimate things in the whole physical universe they assumed the elements of numbers to be the elements of everything, and the whole universe to be a *harmonia* or number.

*Met. A*, 985b 23–6; 985b 31–986a2

According to Aristotle, the Pythagoreans considered that mathematical principles were the principles of all things and numbers were the principles of mathematical principles;

so it follows that all is number. ‘Number’ becomes an ontological principle, both the origin and the essence of being, and *harmonia* occupies a central role in this ontology since *harmonia* is to be understood in terms of number, even though the precise connection between the two remains somewhat opaque. Many, including Burkert (1979) and Huffman (1993) have claimed that Aristotle’s description of the Pythagorean theory in *Metaphysics* A (as well as *De Caelo*) corresponds to Philolaus’ theories.

However, while I will go on to argue that *harmonia* must be connected with number, both for Philolaus and for Plato, we must be wary of unhesitatingly attributing such a view to Philolaus<sup>44</sup>. Further, both number and *harmonia* play important roles in Philolaus’ cosmology, but that is not tantamount to their being cosmological metaprinciples. At any rate, the ontological status of *harmonia* remains our primary concern in this section and, even if *harmonia* was a metaprinciple for some

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<sup>44</sup> I am not commenting, here, on the difficulties associated with attributing such a view to the early Pythagoreans in general. Cherniss (1935, p. 590) expressed skepticism about the veracity of Aristotle’s reports on the Pythagorean doctrine of numbers. Zhmud (2012) goes as far as to claim that Aristotle *invents* a number philosophy that never existed in early Pythagoreanism. I think that Zhmud’s criticisms are excessive — the genuine fragments of Philolaus are reason enough to believe that the early Pythagoreans had some kind of ‘number philosophy’ even if Aristotle’s reconstruction of it isn’t wholly accurate (as is often the case with his reconstructions of Presocratic thought). Philolaus certainly did not claim that everything *was* number; he did, however, claim that all things must possess number in order to be *known* (DK44 B4) — number is an important *epistemological* — rather than *ontological* — principle in Philolaus’ thought.

Pythagoreans, I will go on to argue, *pace* De Vogel, that we do not have sufficient textual evidence for this view in the fragments of Philolaus<sup>45</sup>.

Huffman (1993, pp. 128–130) doesn't propose outright that *harmonia* is a cosmic metaprinciple but suggests that although Philolaus thinks that some sort of harmony must “supervene” upon the limiters and unlimiteds in order to bind them together in the *kosmos*, he remains agnostic about the ontological status of that which “fits together” because he simply says that it supervenes “in whatever way it came to be.” According to Huffman, we have no good basis on which to conclude what kind of harmonizing force is active in the world; we have no grounds to claim that it is Empedoclean love or strife or an Anaxagorean vortex or any other particular type of force. Thus, since we can conclude only that a “fitting together” has occurred, a *harmonia* of some sort must also be included among the characteristics of ultimate reality (1993, p. 129). In the remainder of this section, I will offer a close examination of Fragment 6 in order to tease out the possible interpretations and attempt to answer which of these is most plausible.

The first problem that confronts us is the following phrase: “εἰ μὴ ἁρμονία ἐπεγένετο ὠτινιῶν ὅδε τρόπῳ ἐγένετο”. Huffman translates “*epegeneto*” as “came upon”, Burkert as “supervened” and Lang as “appeared later” but it is not clear how this should be understood. Presumably, it should be viewed in connection with the

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<sup>45</sup> See Huffman (1993) on the difficulties associated with calling Philolaus a ‘Pythagorean’.

previously used words *hyparchousas* and *hyparchon* since they would be opposites: *epegeneto* would refer to that which “appears later” (literally: “is born later”<sup>46</sup>) or to *harmonia*; *hyparchousas* and *hyparchon*, on the other hand, refer to that which “is before.” Both *hyparchousas* and *hyparchon* are active participles of *hyparchein*. In the context of Fragment 6, Huffman translates these as “preexist”; here, *hyparchousas* refers to τᾶς ἐστοῦς τῶν πραγμάτων – thus, “ἃ τῶν πραγμάτων ἐστὼ” (“the essence/being of things”) preexists both *tōn perainontōn*, and *tōn apeirōn*. However, this gives us our second puzzle — how should we interpret this ‘*estō*’?

Scoon (1922) suggests that “*estō*” must be something like Aristotelian matter; however, as Huffman (1993, pp. 130–1) points out, there is little evidence for such a reading<sup>47</sup>. Huffman (*ibid.*) himself suggest that it refers to the *physis* of the earlier pre-Socratic thinkers. Yet another possible reading would connect it to the “*archai*” mentioned later in the fragment. We could connect the “essence” of limiters and unlimited to their *archai* (understood ontologically and not only temporally)<sup>48</sup> — *peras*

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<sup>46</sup> LSJ cites such definitions as: to be born after, come into being after, come at the end, come as fulfillment

<sup>47</sup> The primary reason for such a claim is probably pseudo-Archytas’ use of it in the phrase “ἃ ἐστὼ τῶν πραγμάτων” where “ἐστὼ” is clearly Aristotelian matter. However, as Huffman (1993:131) argues, in the absence of an Aristotelian conceptual framework, there seems no basis for attributing an overly technical sense to “ἐστὼ” (be it ‘matter’ or ‘form’).

<sup>48</sup> See Huffman (1993, pp. 80–3) for reasons why it is not anachronistic to translate ἀρχή as “(first) principle” rather than as “beginning” even though the latter was common among pre-Socratics and the former tends to be associated with Aristotle and his followers. For one, this sense of ἀρχή is already attested in the Hippocratic corpus, parts of which are more or less contemporaneous with the writings of Philolaus.

and *to apeiron*, an opposition even more familiar in later Greek thought. If we wanted to read *ta perainonta* and *ta apeira* as the “*archai*” in question, we would have to accept that *ta perainonta* and *ta apeira* are synonyms of “ἡ τῶν πραγμάτων ἔστώ”, but it seems, rather, that they are synonyms of “*ta pragmata*”. Moreover, “*tai archai*” cannot be synonymous with ἡ τῶν πραγμάτων ἔστώ because they do not match in number. One way to resolve this puzzle is to posit that the existence of ἡ τῶν περαινόντων ἔστώ and ἡ τῶν ἀπείρων ἔστώ where the former is *peras* and the latter is *to apeiron*. These, then, could be the “*archai*”, that preexist *harmonia*.

However, there is limited textual evidence for any of the hypotheses offered above, so let us bracket the question until we resolve some other puzzles in Fragment 6. The most pressing of these is one that has already been touched upon: what does it mean for *harmonia* to ‘come upon’ limited and unlimited things? Philolaus uses the words “*epegeneto*” and “*egeneto*”, both forms derived from *gignomai*, the basic meaning of which is “to be begotten, to be created”. It is, perhaps, worth noting that in the first part of Fragment 6 we encounter a different form of *gignomai*, namely *gegnēsthai*, and there it refers to οὐθενί τῶν ἑόντων καὶ γιγνώσκόμενον ὑφ’ ἀμῶν, or to αὐτὰ ἀ φύσις — in other words to ἀ φύσις γεγενῆσθαι.

In conjunction with Fragment 1, then, we have the following ideas: *physis* in the *kosmos* “is born,” “is produced,” or is “harmonized” from the limiting things and unlimiting things (whose *archai* could be *peras* and *apeiron*). We also know that



harmony “is born,” and not *hyparchē*: ὥτινιῶν ἄδε τρόπῳ ἐγένετο. However, if we were to translate *epegeneto* as supervene (in the sense of “come additionally”, not “happen”), then we would need to accept that *harmonia* joins or acts upon the *archai* to beget *harmonia*. This would mean that Philolaus uses the “*harmonia*” in two different senses: first as a metaprinciple and then a product.

The infinitives “*synkeklesthai*,” “*katachesthai*,” and “*kosmēthēnai*” complicate the matter even more — they could refer either to “*tai archai*” or to “*ta perainonta*” and “*ta apeira*” (assuming that they are *not* the *archai* in question). Read in the latter way, the *kosmos* is made up of *ta perainonta*, *ta apeira*, and their connection (*harmonia*); they are elements of the *kosmos* whereas their *archai* or *estō* are not elements of the *kosmos* since it is not they who have to *kosmēthēnai*. The final interpretation would then be the following: the world is an ordered *kosmos*; this *kosmos* contains *ta perainonta*, *ta apeira* and *harmonia*; their *archai* constitute the “pre-existent” *essence* of things limited and unlimited. However, since these principles are different, while the perceived *kosmos* is a unity and not a divisible duality, *harmonia* had to have been “begotten later” than the principles, with “later” understood in relation to “ταῖ ἀρχαί ὑπάρχον”. This allows us, at any rate, to see that De Vogel’s interpretation is mistaken: *harmonia* is not some kind of meta-principle on par with the pre-existent *archai*. However, we still need to arrive at some idea of what *harmonia* is, for Philolaus.

I propose that one natural way of understanding *harmonia*, given all the textual evidence, is that it — along with *ta perainonta* and *ta apeira* — is produced or begotten from pre-existence principles and it serves, in various domains, to harmonize (properly fit together) what ought to be harmonized (dissimilar things). One problem with many existent interpretations of Philolaus' view of *harmonia* is the tendency to read Fragment 6 without Fragment 6a — I believe that McKirahan (forthcoming) is correct to point out that Fragment 6a is the *key* to better understanding Fragment 6:

ἁρμονίας δὲ μέγεθος ἔστι συλλαβὰ καὶ δι' ὀξειᾶν· τὸ δὲ δι' ὀξειᾶν  
 μεῖζον τᾶς συλλαβᾶς ἐπογδόωι. ἔστι γὰρ ἀπὸ ὑπάτας ἐπὶ μέσσαν  
 συλλαβὰ, ἀπὸ δὲ μέσσης ἐπὶ νεάταν δι' ὀξειᾶν, ἀπὸ δὲ νεάτας ἐς  
 τρίταν συλλαβὰ, ἀπὸ δὲ τρίτας ἐς ὑπάταν δι' ὀξειᾶν· τὸ δ' ἐν μέσῳ  
 μέσσης καὶ τρίτας ἐπόγδοον· ἃ δὲ συλλαβὰ ἐπίτритον, τὸ δὲ δι' ὀξειᾶν  
 ἡμιόλιον, τὸ διὰ πασᾶν δὲ διπλόον. οὕτως ἁρμονία πέντε ἐπόγδοα  
 καὶ δύο διέσεις, δι' ὀξειᾶν δὲ τρία ἐπόγδοα καὶ διέσεις, συλλαβὰ δὲ  
 δύο ἐπόγδοα καὶ διέσεις.

The magnitude of the *harmonia* is the fourth (*syllaba*) and the fifth (*di' oxeian*). The fifth is greater than the fourth by the ratio 9:8 [tone]. For from lowest tone to middle string is a fourth and from middle string to highest tone is a fifth but from the highest tone to third string is a fourth and from the third string to the lowest tone is a fifth. That which is between the third string and the middle string is the ratio 9:8 (*epogdoos*), the fourth has the ratio 4:3 (*epitritos*), the fifth 3:2 (*hēmiolios*), and the octave 2:1 (*diploos*). Thus the *harmonia* is five 9:8 ratios [tones] and two dieses [semitones]. The fifth is three 9:8 ratios and a *diesis*, and the fourth two tones and a *diesis*.

We can understand these ratios with reference to the structure of a Greek lyre in the 5<sup>th</sup> century. The lyre had seven strings, each of which could sound one note. As Vitrac

(2006) and McKirahan (2013), among others, have noted, one of the greatest Pythagorean innovations was the discovery of the ratios created by stopping the string at a particular point along its length — a string played when stopped halfway created a sound that was an octave below the unstopped string, a string played when it has been stopped three quarters of the way along its length created a sound a fourth below the unstopped string, and so on<sup>49</sup>. The most basic ratios that were derived from this system were the octave (2:1), the fifth (3:2) and the fourth (4:3). While integers could be used to denote the pitch of a tone, ratios were of utmost importance for measuring intervals.

In this fragment, *harmonia* is simply the imposition of limit (ratios) on the unlimited (strings). The *harmonia* here is a particular *systema hērmosmenon* (tuning) — more specifically, the octave — and we are told that its ‘magnitude’ is the fifth and the fourth, the ratios of which are 3:2 and 4:3 respectively. It is evident that we do not reach 2:1 by adding these ratios; however as Tannery (1920) has remarked, *multiplying* the fourth and the fifth does give us the the ratio of the octave/*harmonia/dia pasōn* (2:1). It is also worth noting that Philolaus uses the epigdoic ratio (9:8) to express the

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<sup>49</sup> Aristides Quintilianus reports that Pythagoras urged his disciplines to work on the monochord even as he lay dying: διὸ καὶ Πυθαγόραν φασὶ τὴν ἐντεῦθεν ἀπαλλαγὴν ποιούμενον μονοχορδίζειν τοῖς ἐταίροις παραινέσαι δηλοῦντα ὡς τὴν ἀκρότητα τὴν ἐν μουσικῇ νοητῶς μᾶλλον δι' ἀριθμῶν ἢ αἰσθητῶς δι' ἀκοῆς ἀναληπτέον. (*De Musica* 3.2.7-10). This ‘monochord’ was not a musical instrument, since it could not be played to produce a melody of any kind, but it was an important tool for the science of harmonics — it was probably the first instrument designed to measure intervals.

difference between the fifth and the fourth rather the more familiar musical term, *tonos*.<sup>50</sup>

We could argue, if we take 6a to be an elaboration of the kind of *harmonia* that Philolaus has in mind, that *harmonia* in Fragment 6 need not be read as a grand cosmological claim and, further, that, *pace* Huffman, “in whatever way in came to be” is not a marker of Philolaus’ agnosticism about the nature of *harmonia*; he is simply claiming that there are many limited and unlimited things that make up the *kosmos* and, in order for unlimited things to join as well as for unlimited things to join limited things, there needs to be some proper fitting together, i.e. *harmonia*. In McKirahan’s (2013, p. 185) words, *harmonia* “is the way the limiters and unlimiteds that constitute it are arranged in an orderly structure.”

We could also, on this view, take the *archai* to be not the first principles of the universe but, rather, the explanatory principles of the various unlimited and limited things or of the domains within which they fall. Huffman (1993 *passim*) calls attention

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<sup>50</sup> See McKirahan (2013) and Barker (2007, pp. 264–71) for a detailed description of Philolaus’ harmonic system. Barker comments on the unusual vocabulary — *di’ oxeian* where one might expect *dia pente* and *syllaba* where one might expect *dia tessaron*. It seems that many of the terms used in this fragment are borrowed from music. At the same time, the use of ratios and the claim that all things have number (B4) provides this fragment with mathematical overtones as well. For this reason, Barker (2007, p. 271) concludes that “Philolaus’ approach is a hybrid between two perspectives [i.e. empirical and abstract/mathematical] which were later treated as incompatible.”

McKirahan’s main disagreement with Barker’s analysis concerns the importance of the epogdoic ratio (9:8). Barker thinks that the mathematical sense of this ratio can be dismissed; McKirahan, on the contrary, thinks that the 9:8 ratio is crucial in order for us to understand the precise nature of the musical-mathematical innovation in this fragment.

to the use of *archai* in the Hippocratic corpus and in the domain of mathematics (especially by Hippocrates of Chios) in order to argue that this is how we should understand the *archai* (even though he continues to regard *harmonia* as a ‘principle’ of sorts). I think that Huffman’s reading of the *archai* taken with McKirahan’s (2013) interpretation of *harmonia* offers us a coherent explanation of Philolaus’ views on *harmonia*.

Reading 6 and 6a together, Philolaus is claiming that we can comprehend music by knowing (1) the unlimiteds and limiters it is composed out of (range of possible intervals and particular tunings, perhaps), (2) by understanding *how* those unlimited and limiters fit together to compose it, i.e. by understanding the manner in which *harmonia* ‘supervenes’ on them and, finally, (3) by knowing the number the thing ‘has’. These steps can applied to all things in the *kosmos* (McKirahan 2013, p. 199) — everything is made up of some combination of unlimiteds and limiters and *harmonia* tells us about the nature of this fitting together. On this reading, Philolaus takes number to be the key to knowledge (B4) and *harmonia* to be the key to reality (B6); knowledge and reality are then connected by relating *harmonia* to number (B6a). I will return to the Philolaic doctrine of *harmonia* in Chapter 5 on the *Timaieus*. However, we also find an interesting echo of Fragment 6a in the Hippocratic *de Victu*, which I discuss in the following section.

## VII. Hippocratic Corpus

In a very influential article, Gregory Vlastos has claimed that “*harmonie*” is a Pythagorean concept that is “without parallel in Alcmaeon or any other of the *physiologoi* or medical writers” (1953, p. 345) and that “harmonious order” in pre-Socratic cosmology and Hippocratic medicine entails “equality, i.e. the 1/1 ratio (*ibid.*).” This is obviously not the case for Heraclitus or Empedocles, as I have argued earlier in this chapter. I will now attempt to show that Vlastos’ description is not wholly accurate with respect to the Hippocratics either by analyzing two key passages from *περὶ διαίτης* (hereafter *Vict.*). While I will center my discussion on the passages on *harmonia* in *Vict.*, I will also talk about possible ‘Presocratic’ influences on *Vict.*.

There are eight tokens of the noun “*harmonia*” in the entire Hippocratic corpus — twice in *κατ’ ἰητρῆιον* (*Off.* 25.4, 25.11), four times in *περὶ διαίτης* (*Vict.* 8.8, 8.10 9.3, 18.2), once in *περὶ ἑπταμήνου* (*Septim.* 9.27), and once in *περὶ ὀστέων φύσιος* (*Oss.* 12.3)<sup>51</sup>. In both *Oss.* and *Off.*, “*harmonia*” refers to the commissure between the bones of the head. This usage brings to mind the mechanical sense used in the *Odyssey* since *harmonia* refers to the literal joining together of material components — it was planks of wood in the case of the *Odyssey* and it is cranial bones in this context. In *Septim.*, the author invokes an order which is held to be the true and perfect number

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<sup>51</sup> There are, however, dozens of tokens of the cognate verb *harmozō*.

system on the basis of the “doctrine” (*logos*) of *harmoniē*:

σκοπεῖν γὰρ χρὴ τὸν μέλλοντα ἡτρὸν ὀρθῶς στοχάζεσθαι τῆς τῶν καμνόντων σωτηρίας, θεωροῦντα μὲν περίττας πάσας, τῶν δὲ ἀρτίων τὴν τεσσαρεσκαίδεκάτην καὶ τὴν ὀγδόην εἰκοστήν καὶ τεσσαρακοστήν καὶ δευτέρην. Οὗτος γὰρ ὁ ὅρος τίθεται τῷ τῆς ἀρμονίης λόγῳ πρὸς τινῶν καὶ ὁ ἀρτιφυῆς τε καὶ τέλειος ἀριθμός· δι' ἣν δὲ αἰτίην, μακρότερον ἂν εἴη ἐπὶ τοῦ παρόντος διεξελεῖν· θεωρεῖν δὲ χρὴ οὕτως τριάσι τε καὶ τετράσι· ταῖς μὲν τριάσι συνημμέναις ἀπάσαις, ταῖς δὲ τετράσι δύο μὲν παρὰ δύο συνημμέναις, δύο δὲ παρὰ δύο συνεζευγμέναις.

For a person who intends correctly to assess the treatment of patients must make his investigation by attending to all the odd days, and of the even ones to the fourteenth, the twenty-eighth, and the forty-second. For this order is held by some people, on the basis of the *logos* of *harmonia*, to be the *artiphyēs*<sup>52</sup> and perfect number system, for reasons it would be too long to go into on this occasion. He must base his observations on triads and tetrads of days, the triads in joining them all and the tetrads in joining them two by two and coupling them two by two. *Septim.* 9.25–8, tr. after the French of Littré<sup>53</sup>.

One rather wishes that the author hadn't found the reasons μακρότερον ἂν εἴη ἐπὶ τοῦ παρόντος διεξελεῖν. We might turn to a parallel in Diogenes Laertius' *Vita* of Pythagoras for some clarification:

τὸ δὲ σπέρμα εἶναι σταγόνα ἐγκεφάλου περιέχουσιν ἐν ἑαυτῇ θερμὸν

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<sup>52</sup> This is a *hapax* in the Hippocratic corpus (and very rare in general) and its meaning is far from clear. It has been variously understood as “even” (LSJ definition II) and “true” (in the Loeb translation). The DGE defines our word as “par **por naturaleza**” (emphasis mine). Literally it means, of course, something like “just born”. For more, see Delatte (1930, pp. 170–171)

<sup>53</sup> Here, as well as in the text translated below, some have translated ‘*logos*’ as ‘doctrine’ whereas others have translated it ‘ratio’ — since there is some ambiguity about whether or not ‘*logos*’ is to be taken in its mathematical sense, I leave it untranslated.

ἀτμόν· ταύτην δὲ προσφερομένην τῇ μήτρᾳ ἀπὸ μὲν τοῦ ἐγκεφάλου ἰχῶρα καὶ ὑγρὸν καὶ αἷμα προΐεσθαι, ἐξ ὧν σάρκας τε καὶ νεῦρα καὶ ὀστᾶ καὶ τρίχας καὶ τὸ ὅλον συνίστασθαι σῶμα· ἀπὸ δὲ τοῦ ἀτμοῦ ψυχὴν καὶ αἴσθησιν. μορφοῦσθαι δὲ τὸ μὲν πρῶτον παγὲν ἐν ἡμέραις τεσσαράκοντα, κατὰ δὲ τοὺς τῆς ἁρμονίας λόγους ἐν ἑπτὰ ἢ ἐννέα ἢ δέκα τὸ πλεῖστον μηνὶ τελεωθὲν ἀποκυτiskeσθαι τὸ βρέφος· ἔχειν δ' ἐν αὐτῷ πάντας τοὺς λόγους τῆς ζωῆς, ὧν εἰρομένων συνέχεσθαι κατὰ τοὺς τῆς ἁρμονίας λόγους, ἐκάστων ἐν τεταγμένοις καιροῖς ἐπιγινομένων.

The seed is a drop of brain containing within it hot vapor; and this when brought to the womb expels ichor and water and blood from the brain, and from this are formed flesh and tendons and bones and hair and the whole frame of the body; soul and perception [are formed] from the vapor. First, to be formed it congeals in forty days, according to the *logoi* of *harmonia* in seven or nine or, at the most, ten months the infant having reached completion is born. He has within himself all the [harmonic] *logoi* of life, and these, being a connected system, keep it together according to the *logoi* of *harmonia*, each appearing at regular intervals. *DL*, VIII.29

Delatte (1930) cites this passage, attributed by Diogenes to Alexander Polyhistor (floriat 50 BCE), in support of his view that the Hippocratic description was ‘borrowed’ from older Pythagorean sources. He cites, further, Censorinus’ *De die natali* (9 and 12) in order to clarify both the passage in *Septim.* and the passage cited above which, he fairly notes, is not much clearer than the Hippocratic one (*ibid.*: 166).

According to Censorinus (*apud* Delatte) Pythagoras believed in two types of pregnancy: a seven-month one (completed in 210 days) and a ten-month one (completed in 274 days). There are four stages of fetal development: for the first six days, the seed turns into a milky humor; during the following eight days, this humor



turns into blood; then after nine more days the blood is turned into hair; finally, after twelve days, the human form appears. It is no coincidence that the numbers are 6, 8, 9, and 12: the ratio of 8:6 is that of the fourth, of 9:6 that of the fifth, and 12:6 that of the octave. Furthermore, the sum of these numbers (6+8+9+12) multiplied by 6 gives us the number 210, which is one of the two possible number of days of gestation.

With this key, let us return to our earlier texts. For the moment, I leave aside the question of whether this is indeed a ‘Pythagorean’ borrowing — considering that Diogenes reports that Alexander reports that it was a Pythagorean tenet, we are not on unshakably firm ground in claiming that this is the case. At any rate, the question of borrowings from and within the Hippocratic corpus is a fitting subject for an entirely different work. Whichever way the influence went, these passages are of interest for anyone wishing to explore the archaic doctrine of *harmonia*.

The *logoi* of *harmonia* described in Diogenes’ text must be the ratios of the fourth and the fifth; the development of the foetus takes place in accordance with these ratios. We are now left to understand how the sequence of 14, 28, and 42 is in accordance with the ‘ratios of *harmonia*’ and part of a perfect number system. Even without the aid of the passages from Diogenes and Censorinus, we can see that these numbers are all multiples of seven. Recall that the ratios of *harmonia* are supposed to make up the *artiphysēs* and perfect number system. Now, for many of the mathematicians of ancient Greece, a complete or perfect (*teleios*) number was the sum

of its parts or, rather its factors<sup>54</sup> — 28 is a perfect number (1+2+4+7+14) as is 6 (1+2+3), and so on; however, 42 is not, at least according to this definition, a perfect number (the sum of its factors is 54).

However, 42 *is* the product of six (whose zoogonic significance should be evident from the discussion of Censorinus above) and seven. Leaving aside all considerations of a possibly mystical significance possessed by the number seven, I follow Delatte in using the last few sentences of the passage as the key to understanding the significance of seven.

Recall that the days are all joined in triads and that tetrads are used to join the days in pairs. The special nature of these tetrads leads Delatte to speculate that the middle term was shared — in other words, the first tetrad is 1-4 and the second tetrad is 4-7; the ratio here is 1:4:7, which is one of the kinds of ratios recognized by the ancient Greek mathematicians<sup>55</sup>. If the first set of joint tetrads goes from one to seven, the second goes from eight to fourteen, the third from fifteen to twenty-one, the fourth from twenty-two to twenty-eight, the fifth from twenty-nine to thirty-five, and the sixth from thirty-six to forty-two. Six groups of seven numbers (pairs of joint tetrads)

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<sup>54</sup> While this is definition well attested in Euclid (VII Def. 22), it is not explicitly defined as such in Plato or in any extant pre-Platonic text.

<sup>55</sup> Ratios could consist of four discrete numbers (1:2::4:8) or they could share a middle term as is the case in our example above. This second kind of ratio was called “*analogia synēmmēnē*”. The triads, on the other hand, are another kind of ratio — to use Delatte’s (1930, p. 170) example, 4:7::8:11 and 11:14::15:18 are examples of the ratios formed by triads, which join all numbers and not only pairs of four numbers.

make up the forty days critical for the growth of the embryo.

In *Vict.*, we learn more about *harmonia* and embryology, albeit in less mathematical terms. Hynek Bartoš (2015) has convincingly argued that the author of *Vict.* develops a remarkable philosophical framework for his dietetic account, reflecting upon and making use of some of the most important philosophical ideas of the fifth century, such as those of Empedocles, Heraclitus, and Anaxagoras — we find, in this text, a sophisticated elemental theory, an account of the analogy between microcosm and macrocosm and, according to Bartoš (2015), the most profoundly elaborated account of the body-soul relationship available in the extant pre-Platonic literature. Moreover, echoes of the account in *Vict.* can be seen in later philosophers, from Plato onwards<sup>56</sup>. Let us, then, turn to this text.

At the beginning of *Vict.* I, the author tells us that we must understand human nature before we say anything about dietetics. Understanding human nature requires us to (1) acquire 'a knowledge of man's primary constituents' and (2) 'discern[...]the components by which it is controlled.' Concerning the dietetic aims of the treatise, the author presupposes that anyone who wants to write about regimen must know the 'powers' (*dynameis*) of all foods and drinks as well as of the exercises, because 'food and exercise, while possessing opposite *dynameis*, work together to produce health.'

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<sup>56</sup> In Simmias' account of the soul in *Phaedo* 83e ff., for instance. See Chapter 3.

He goes on to claim that all living entities are made up of fire and water (*Vict. I.3*)<sup>57</sup>— together, these account for everything even though, by themselves, neither of these suffices (*I.3*). According to the author, all apparent generation and corruption is, in fact, the mingling and separation of immortal parts of living entities and we are offered an *ex nihilo nihil fit* argument that echoes, almost verbatim, Empedocles and Anaxagoras. Since fire and water are the basic constituents, dietetics requires us to maintain some kind of a balance between these opposites both within the body and with respect to the environment. In *I.32*, we are given a typology of human constitutions based on fire, water and properties associated with them (cold, moist, dry, warm)— at the beginning of *I.4* fire is described as hot and dry and water as cold and moist<sup>58</sup>.

For the author, the human soul is made up out of fire and water but so are embryos. Digestive procedures, too, are explained in terms of fire and water. These opposites make up the immortal seeds that enter men and women and separate into sperm and the female counterpart of sperm. An embryo only begins to grow when the two kinds of seeds mingle at the right time and in the right way. In *I.8*, the author describes this mingling as a *harmoniē* of male and female seeds, using language that

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<sup>57</sup> It might be worth pointing out that this goes strongly against the humor-*dynamis* theory of *VM*.

<sup>58</sup> Τούτων δὲ προσκέεται ἑκατέρῳ τὰδε· τῷ μὲν πυρὶ τὸ θερμὸν καὶ τὸ ξηρὸν, τῷ δὲ ὕδατι τὸ ψυχρὸν καὶ τὸ ὑγρόν· ἔχει δὲ ἀπ' ἀλλήλων τὸ μὲν πῦρ ἀπὸ τοῦ ὕδατος τὸ ὑγρόν· ἐνὶ γὰρ ἐν πυρὶ ὑγρότης· τὸ δὲ ὕδωρ ἀπὸ τοῦ πυρὸς τὸ ξηρόν· ἐνὶ γὰρ ἐν ὕδατι ξηρόν.

strongly echoes Philolaus' description of musical *harmoniē* in DK44 B6a (discussed above)<sup>59</sup>. We already know that certain parts of fire and water are nourished in an embryo and that parts of the embryo receive nourishment until they are sufficiently large. At this point, these parts move into a larger place by force and necessity, and the portions start to separate off and commingle by changing position. We are then told:

χώρην δὲ ἀμείψαντα καὶ τυχόντα ἀρμονίης ὀρθῆς ἐχούσης συμφωνίας  
 τρεῖς, ξυλλήβδην διεξὸν διὰ πασέων, ζῶει καὶ αὖξεται τοῖσιν  
 αὐτοῖσιν οἷσι καὶ πρόσθεν· ἣν δὲ μὴ τύχῃ τῆς ἀρμονίης, μηδὲ ξύμφωνα  
 τὰ βαρέα τοῖσιν ὀξέσι γένηται, ἣν ἡ πρώτη συμφωνίη, ἣν ἡ δευτέρη  
 γεννηθῇ ἢ τὸ διὰ παντὸς, ἐνὸς ἀπογενομένου πᾶς ὁ τόνος μάταιος·  
 οὐ γὰρ ἂν προσαείσειεν· ἀλλ' ἀμείβει ἐκ τοῦ μέζονος ἐς τὸ μείον πρὸ  
 μοίρης· διότι οὐ γινώσκουσιν ὅ τι ποιέουσιν.

And if, on changing position, they achieve a correct *harmoniē*, which has three harmonic proportionals, covering altogether the octave, they live and grow by the same things as they did before. But if they do not achieve the *harmoniē*, and the low harmonize not with the high in the interval of the fourth, of the fifth, or in the octave, then the failure of one makes the whole scale of no value as there can be no consonance, but they change from the greater to the less before their destiny. The reason is that they know not what they do.

*Vict.* I.8

Barker (2007, p. 283) claims that the use of “*harmonia*” here can be seen as a parallel of Philolaus' use of it in fragments B6 and B6a. For instance, the Hippocratic author's use of *syllaba* and *di' oxeion* instead of the usual *dia tessaron*, *dia pente* recalls Philolaus.

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<sup>59</sup> See Barker (2007:280–1) for a discussion of the parallels between Philolaus' Fragment 6a and this passage from *Vict.*

According to Delatte (1930), the chord lengths that produce the tuning of musical instruments (*harmoniai*) in this passage are the numbers of days that comprise the diverse periods of development of the foetus — we have here a theory that certainly has some affinities to the one found in *Septim.*<sup>60</sup>. However, we are told a little more about the material constituents of the foetus in *Vict.* and we also learn more about *harmonia* in other domains.

As far as its material constituents are concerned, the opposites that make up the fetus are male and female seeds, which are themselves made up of fire and water. These seeds must be arranged according to the ratios of *harmonie* in order for the eventual creation of a viable foetus<sup>61</sup>. However, if they change in an untimely fashion, they become small and invisible (they cannot cease to exist since the author has already argued that generation and destruction is impossible) — as Bartoš (2015, p. 228) has noted, this passage implies that, from the earliest stages of development, parts of the body have a tendency to harmonize and, further, they have some consciousness of this harmonization (“διότι οὐ γινώσκουσιν ὅ τι ποιέουσιν.”). We must also note that this *harmonie* is attained by fire *kata physin* — so *harmonia* is, perhaps, something natural

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<sup>60</sup> See discussion above. The theory described by Censorinus seems to be in play here. The intervals of the fourth, fifth, and octave can be seen to correspond to the number of days in the four periods of development of the foetus.

<sup>61</sup> The idea that various elements must be properly mixed (*miscere*) in order for an embryo to be a viable infant can be seen as early as Parmenides B18 — he seems to think that males and females contribute seeds with opposing powers and that these oppositions need to be put into the right proportion in order for unity to come about.

that underlies the development of the human body and much else besides, as we will learn from the *physis-technē* analogies to which I now turn. We need to the *physis-technē* analogies in order to better understand the role of *harmonia* and we need to look at the dichotomy between the invisible and visible in order to make better sense of the analogies. So let us proceed in this order.

Following Anaxagoras DK59 B59, perhaps, the Hippocratic author laments, in I.11, that people fail to understand how to understand the invisible through the visible<sup>62</sup>.

The following chapter begins:

Ἐγὼ δὲ δηλώσω τέχνας φανεράς ἀνθρώπου παθήμασιν ὁμοίας  
 ἐούσας καὶ φανεροῖσι καὶ ἀφανέσι. Μαντική τοιόνδε· τοῖσι  
 φανεροῖσι μὲν τὰ ἀφανέα γινώσκειν, καὶ τοῖσιν ἀφανέσι τὰ φανερά,  
 καὶ τοῖσιν ἐοῦσι τὰ μέλλοντα, καὶ τοῖσιν ἀποθανοῦσι τὰ ζῶντα, καὶ  
 τῶν ἀσυνέτων ξυνίασιν, ὁ μὲν εἰδὼς ἀεὶ ὀρθῶς, ὁ δὲ μὴ εἰδὼς ἄλλοτε  
 ἄλλως. Φύσιν ἀνθρώπου καὶ βίον ταῦτα μιμέεται·

But I will show that arts are visibly like to the affections of man, both visible and invisible. Seercraft is after this fashion. By the visible it gets knowledge of the invisible, by the invisible knowledge of the visible, by the present knowledge of the future, by the dead knowledge of the living, and by means of that which understands not men have understanding— he who knows, right understanding always, he who knows not, sometimes right understanding, sometimes wrong. Seercraft herein copies the nature and life of man. *Vict.* I.12.1-6

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<sup>62</sup> Οἱ δὲ ἄνθρωποι ἐκ τῶν φανερῶν τὰ ἀφανέα σκέπτεσθαι οὐκ ἐπίστανται· τέχνησι γὰρ χρεόμενοι ὁμοίησιν ἀνθρωπίνῃ φύσει οὐ γινώσκουσιν· θεῶν γὰρ νόος ἐδίδαξε μιμέεσθαι τὰ ἐωυτῶν, γινώσκοντας ἃ ποιέουσι, καὶ οὐ γινώσκοντας ἃ μιμέονται. Πάντα γὰρ ὅμοια, ἀνόμοια ἐόντα· καὶ σύμφορα πάντα, διάφορα ἐόντα· διαλεγόμενα, οὐ διαλεγόμενα· γνώμην ἔχοντα, ἀγνώμονα·

The *technai* are visible and the human *physis* is invisible; yet we can use one to understand the other since the *technai* are a kind of copy of the human *physis*. So let's turn to some examples of these *technai*. First, we have cobblers (I.15) whose task is to make wholes into parts and parts into wholes; house-builders (I.17), too, use diverse parts to create some kind of whole, and this whole mimics the ideal diet for a human; cooks mix together ingredients that agree (συμφέρω) *while* disagreeing (διαφέρω) — they neither make things alike, nor would it be right if they mixed up everything into one dish (I.18). Thus the cook, like the builder, is supposed to fashion harmonious blends of different ingredients so as both to provide pleasure and ensure health<sup>63</sup>. In *Ancient Medicine* we are also told that it is important to choose food that “harmonizes” (*harmozousan*) with our constitutions rather than choosing food that overpowers them (*VM* iii.34–5) because food, too, is composed of the same components or opposites as

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<sup>63</sup> There is an interesting parallel to this in Confucian texts that compare the task of the cook to that of the musician, with respect to harmony (*he*). Yan-Zi (who died around 500 BCE) is reported to have said (according to the *Zuo zhan*):

“Sounds are like flavors. Different elements complete with one other: one breath, two styles, three types, four instruments, five sounds, six measures, seven notes, eight winds, and nine songs. Different sounds complement one another: the pure and the impure, the big and the small, the short and the long, the fast and the slow, the sorrowful and the joyful, the strong and the tender, the late and the quick, the high and the low, the in and the out, and the inclusive and the exclusive.” *Tr. Li* (2006)

Harmony (*he*) is contrasted with conformity or sameness (*tong*) — the latter involves a single note or a single flavor or, in other words, complete agreement whereas the former involves a balancing of a range of different elements. It is, of course, beyond my scope to explore how the *he/tong* contrast maps on to the *harmonia/isonomia* contrast, but it is nonetheless worth noting the similarities.

Confucius also remarks, in *Analects* XIII.23, that the good person harmonizes but does not seek sameness (again, something like the equality and homogeneity implied by *isonomia*) whereas the petty person seeks sameness but does not harmonize.



the body (i.e. sweet, bitter, acid, salt, etc.) — so the harmonious blending of *food* is necessary for health perhaps because it aids the harmonious blending of elements within us. The musical analogy can explain all of these — the best musical compositions are *harmoniai* of the most diverse musical entities:

ἁρμονίης συντάξεις ἐκ τῶν αὐτῶν οὐχ αἱ αὐταὶ, ἐκ τοῦ ὀξεύος, ἐκ τοῦ βαρέος, ὀνόματι μὲν ὁμοίων, φθόγγῳ δὲ οὐχ ὁμοίων· τὰ πλεῖστα διάφορα μάλιστα συμφέρει, καὶ τὰ ἐλάχιστα διάφορα ἥκιστα συμφέρει· εἰ δὲ ὅμοια πάντα ποιήσῃ τις, οὐκ ἔνι τέρψις· αἱ πλεῖσται μεταβολαὶ καὶ πολυειδέσταται μάλιστα τέρπουσιν.

From the same note come harmonious compositions that are not the same, from the high and the low, which are alike in name but not in sound. Those that are the most diverse make the best agreement; those that are least diverse make the worst. If a musician composed a piece all on one ?[note], it would fail to please. It is the greatest changes and the most varied that delight the most. *Vict.* I.18.2-7

What these visible *technai* have in common with human *physis* is that they all involve the harmonious mixing of diverse entities. The human is made up of discrete parts that must be made up into harmonious wholes; further, since fire and water are the most basic of these parts, the human is made up of *diverse* discrete parts. In I.2, the author told us that knowledge of human *physis* entails analysis of its primary *merea*; I. 6 begins by claiming that the individual is made up out of “parts of parts and wholes of wholes containing a mixture of fire and water”. The unity of opposites is central both to all these aforementioned *technai* and to the human body and soul.

We have yet another passage that contains echoes of Heraclitus and Philolaus:<sup>64</sup>

Οἰκοδόμοι ἐκ διαφόρων σύμφορον ἐργάζονται, τὰ μὲν ξηρὰ ὑγραίνοντες, τὰ δὲ ὑγρὰ ξηραίνοντες, τὰ μὲν ὅλα διαιρέοντες, τὰ δὲ διηρημένα συντιθέντες· μὴ οὕτω δὲ ἐχόντων οὐκ ἂν ἔχοι ἢ δεῖ. Δίαιταν ἀνθρωπίνην μιμέται, τὰ μὲν ξηρὰ ὑγραίνοντες, τὰ δὲ ὑγρὰ ξηραίνοντες, τὰ μὲν ὅλα διαιρέουσι, τὰ δὲ διηρημένα ξυντιθέασι, ταῦτα πάντα διάφορα ἔοντα συμφέρει τῇ φύσει.

Architects make a concordant [construction] out of diverse materials, moistening what is dry, drying what is moist, dividing wholes and putting together what is divided. Were this not so, [the construction] would not be what it should. For it mimics the diet of man; moistening the dry, drying the moist, they divide wholes and put together what is divided. All these being diverse are concordant. *Vict.* I.17.1–5

Recall that the author emphasizes that diversity is a prerequisite for harmony

– “τὰ πλεῖστα διάφορα μάλιστα συμφέρει, καὶ τὰ ἐλάχιστα διάφορα ἥκιστα συμφέρει [...]” Heraclitus’ fragment B8 tells us what opposes brings together and out of diverging things comes the finest harmony. Similarly, Philolaus’ Fragment B10<sup>65</sup>:

ἀρμονία δὲ πάντως ἐξ ἐναντίων γίνεται· <ἔστι> γὰρ <ἀρμονία πολυμιγέων ἔνωσις καὶ δίχα φρονεόντων συμφρόνησις

*Harmonia* in all ways comes to be from the opposites; for *harmonia* is a unification of what is a mixture of many ingredients and agreement of the disagreeing.

We have at least some evidence, *pace* Vlastos (1953), that the Hippocratics

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<sup>64</sup> See Joly (1967, p. 23 ff.) for a discussion of Heracliteanism and Pythagoreanism in *Vict.*

<sup>65</sup> I should note, though, that some doubt has been cast on the authenticity of Philolaus’ Fragment B10 as well as Heraclitus’ Fragment B8.

regarded a positive somatic state as consisting of a harmonic proportion, i.e. one that allows an entity or set of entities to dominate. The surviving fragment of Alcamaeon does, indeed, describe the norm of health as equipoise or *isonomia* but this does not give us reason to believe that the Hippocratic writers held the same views. While mixture (*krēsis*) and measure (*metron*) are important for the sake of somatic health, there is nothing inherent to these concepts that leads us to believe that the mixture would be in a 1:1 ratio and that measure requires equipoise.

I am not trying to claim that the Hippocratics conceived of health as consisting *solely* in harmonic balance. For instance, in *De Nat. Hom.*, we are told that the humors (αἷμα καὶ φλέγμα καὶ χολὴν ξανθὴν τε καὶ μέλαιναν) must be duly proportioned (*metriōs*) to one another in respect of compounding, power and bulk, and that pain comes about when any one of these elements is in excess (I.8). Presumably, pain is a negative somatic state and it comes about when the humors are not in a state of isonomic proportion. However, in certain other cases — embryology and dietetics, for instance — a positive somatic state involves a *harmonic* proportion. Due proportion and *harmonia* are of use in discussions of proper functioning of living entities and the proper arrangement of their parts and *harmonia* always represents, in these cases, a positive somatic state.

One of my goals in this section was to point out that Hippocratic medicine did not conceive only of isonomic proportion as a positive somatic state, as was presumably

the case for Alcmaeon. Even though there is no token of “*isonomia*” in the Hippocratic corpus, I concede that, in some cases, an isonomic proportion best captures a description of health. However, as *Vict.*, clearly illustrates, *harmonia* was also used to convey a state of balance that was conducive to health. The Hippocratic conception of *harmonia* evident in *Vict.* is very similar to other pre-Platonic conceptions of *harmonia* and echoes of this can be seen in Plato’s *Phaedo* (See Chapter 3) as well as in Aristotle’s *de Anima*. Like Plato after him, the writer of *Vict.* seems to have recognized that *harmonia* can be (and, indeed, is) at play in a range of different domains in a manner analogical to the human body.

A final remarkable feature of *harmonia* in the Hippocratic corpus is the connection of *harmonia* to number — Empedocles connected *harmonia* to ratios as well and Philolaus clearly thought that all things had number and we have good reason to believe that *harmonia* was the key to understanding how and why this was the case.

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The power, perhaps, of a notion like *harmonia* lies in the fact that it cuts across domains that concern all of human thought and activity. *Kosmos* and *metron*, for instance, often cover much of the same conceptual or semantic field as *harmonia*; however, *harmonia* is even more remarkable because it operates within the same domains as these notions in addition to other domains, such as music. Historically, one could argue that *harmonia* developed from more primitive concepts of order and

arrangement; however, during the early stages of Greek thought in the fifth century, *harmonia* could already cover the conceptual field that *kosmos* and *metron* jointly covered. This evolution is evident in the growing use of it by the early natural philosophers and then by Plato. With this in mind, let us turn, next, to the uses of *harmonia* and related concepts of order in Plato's early dialogues.

## Chapter 2: Order in the *Gorgias*

There are two primary ways in which *harmonia* and related concepts of order play a role in the pre-metaphysical dialogues of Plato, the first of which is relatively straightforward: there are a few scattered mentions of the role of *harmonia* (as scale or mode) in education as part of discussions that prefigure those of the *Republic* and *Laws* and, perhaps, reflect Damonian views; I will defer my discussion of these until Chapter 4. Second, Plato argues for a strong connection between order (*kosmos*, *taxis*, *metron*, and, of course, *harmonia*) and goodness. The *Gorgias* is of particular interest in this regard – even though there is no token of the noun ‘*harmonia*’ in the dialogue – since we are told here, for the first time, that the good the soul consists in order (*kosmos*, *taxis*) and that there is a kind of isomorphism between the human soul and the *kosmos* – these are ideas that play an exceedingly important role in Plato’s later works. I hope to show, through my analysis of the role of order in this dialogue, that there are remarkable continuities between the *Gorgias*, *Phaedo*, *Republic*, and *Timaeus*.

Like the *Gorgias*, the *Phaedo* shows us that a good soul is one that possesses order; the word for his order is “*harmonia*” in the *Phaedo* even though the *Gorgias* uses other terms in the same semantic field. There are also many parallels between the *Gorgias* and the *Republic*: in both dialogues, Socrates offers an account of the virtuous soul and the good and this is, at least in part, a response to his ‘amoralist’ interlocutors – Callicles

and Thrasymachus – both of whom who happen to embody the kind of excess that marks disorder, disharmony and, ultimately, injustice and immoderation<sup>66</sup>; both dialogues describe justice as an orderly state. Finally, towards the end of the *Gorgias*, Socrates talks about the “*geometrikē isotēs*” that governs both men and gods – we will learn much more about the power of different kinds of equality in the *Timaeus*. I will begin with a discussion of disorder and excess in the *Gorgias* before turning to justice and order.

## I. Disorder and tyrannical justice

One of the bases of Sophistic argumentation is the use of the notion of *physis* as the principle justifying disproportionality and injustice. This is the clearly established position of Calicles in the *Gorgias*, and is revisited in a new form by Thrasymachus in Book I of the *Republic*. The argument of Calicles is based on the distinction between *physis* and *nomos*, a distinction he introduces from the outset to criticize Socrates' ‘sophisms’ and to establish his reasoning. He first reproaches Socrates for using this distinction in order to refute Gorgias and Polos and then uses them in his own account by defining them and relating the excesses and *pleonexia* to nature (*Grg.* 483 d).

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<sup>66</sup> Paul Friedländer (1964) has claimed that even the structures of the *Gorgias* and *Republic* I seem parallel – three debates in order of ascending seriousness and depth.

When Callicles invokes *physis*, he is referring to a principle that is at the origin of relations among humans and also governs the contents of these relations. For Callicles, this principle is based on the distinction between the strongest (*kreittōn*), the most powerful (*dynatōterōn*), the most valiant (*ameinō*) and the weakest (*heittōn*), the most impotent (*adynatōterōn*) and valueless (*cheirōn*). We observe that what happens in nature, among animals, among men, and among societies, is the domination of the strong over the weak. Paradoxically, what is done in nature is then set up as a norm: Callicles defines "the just according to nature". The foundation of law is none other than what is being done. Callicles' thesis is that there is a justification for the law of the strongest and *pleonexia* of those who are considered superior:

ἡ δέ γε οἶμαι φύσις αὐτὴ ἀποφαίνει αὐτό, ὅτι δίκαιόν ἐστιν τὸν ἀμείνω τοῦ χείρονος πλεον ἔχειν καὶ τὸν δυνατώτερον τοῦ ἀδυνατωτέρου. δηλοῖ δὲ ταῦτα πολλαχοῦ ὅτι οὕτως ἔχει, καὶ ἐν τοῖς ἄλλοις ζώοις καὶ τῶν ἀνθρώπων ἐν ὅλαις ταῖς πόλεσι καὶ τοῖς γένεσιν, ὅτι οὕτω τὸ δίκαιον κέκριται, τὸν κρείττω τοῦ ἥττονος ἄρχειν καὶ πλεον ἔχειν.[...] ἐὰν δέ γε οἶμαι φύσιν ἱκανὴν γένηται ἔχων ἀνὴρ, πάντα ταῦτα ἀποσεισάμενος καὶ διαρρήξας καὶ διαφυγὼν, καταπατήσας τὰ ἡμέτερα γράμματα καὶ μαγγανεύματα καὶ ἐπὶ ὧδὰς καὶ νόμους τοὺς παρὰ φύσιν ἅπαντας, ἐπαναστὰς ἀνεφάνη δεσπότης ἡμέτερος ὁ δοῦλος, καὶ ἐνταῦθα ἐξέλαμψεν τὸ τῆς φύσεως δίκαιον.

But I think nature itself shows this, that it is just for the better man to have more than the worse, and the more powerful than the less powerful. Nature shows that this is so in many areas among other animals, and in whole cities and races of men, that the just stands decided in this way the superior rules over the weaker and has more. [...] I think that if a man is born with a strong enough nature, he will shake off and smash and escape all this. He will trample on all our writings, charms, incantations, all the rules contrary to nature. He rises up and shows himself master, this slave of ours, and there



the justice of nature suddenly bursts into light. *Gorgias*, 483d 1-5; 484 a3-b1<sup>67</sup>

Callicles' reasoning rests on a series of predication: what is shameful and ugly by nature is to suffer disadvantage; and what is shameful and ugly is identified with impotence in the face of injustice. This condition therefore belongs to the weak and the slaves and leads to the inverse predication: what is fine and beautiful according to nature, the domination of the strongest, is identified with what is right.

"To have more" or "have superiority over" often translates terms with the base "*pleon*," such as *pleonektein*, *pleon echein* and *pleonexia*. The meaning of this term retains the ambiguity with which Callicles, ever the sophist, plays: "to have more" and "to be superior" as if the superior were always the one with more and vice versa. In the mind of the sophist, it is evident that the legitimacy of abundance, wealth and power originates in the superiority of nature of the individual. Conversely, those who suffer injustice, without rectifying or avenging it, show their weakness and inferiority: hence the reference to the slave whose condition is to suffer injustice.

Callicles openly links superiority to virtue, *arētē*, taken here in its primary and epic sense of "excellence" and mingled with the new face of the tyrant. This leads us to a hybrid notion of *arētē*. The primary function of man is power, and its finality, happiness, is understood as the satisfaction of desires and passions. Excellence is none

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<sup>67</sup> All *Gorgias* translations are after Zeyl (1987).

other than this ability to hold power in order to achieve its happiness. Excess can be found in two dimensions: power is not shared, but individual, hence the praise of the tyrant; desire is, so to speak, unlimited, its very nature is to lead to excess when it is not mastered. Thus, excess of desire is claimed by Callicles as a good, a view that is antithetical to the ones expressed by Plato in various dialogues. Socrates responds to this eulogy of power and excess by defining justice and the good in terms of measure and order, and it is to this discussion that I now turn.

## II. *Taxis*, *Kosmos*, and Justice

The conversation between Callicles and Socrates from *Grg.* 488 b to 507 a represents, quite starkly, the opposition between the measured sage and the disproportionate figure of the tyrant. The excesses of the tyrant are exercised not only with regard to politics and laws, but also in the insatiable realization of desires and pleasures. Plato, ever the ironist, goes so far as to have Callicles speak of “*metron*” (484 c 6) when he says that philosophy which must be practiced “with measure.” In his response to Callicles, Socrates offers arguments that revolve around “*taxis*” and “*kosmos*”.

The criticism rests in part on the idea of order and proportion: not only are order and proportion preferable from a moral point of view, but above all the fields of human thought, nature, city, technique, body and soul, are founded on these notions. I will not discuss Socrates’ general refutation of Callicles, but will focus rather on these central points about order. Using a method that is certainly not unique to the *Gorgias*,

the controlling idea of Socrates' refutation is introduced through a technical paradigm:

Ἴδωμεν δὴ οὕτωςι ἀτρέμα σκοπούμενοι εἴ τις τούτων τοιοῦτος γέγονεν· φέρε γάρ, ὁ ἀγαθὸς ἀνὴρ καὶ ἐπὶ τὸ βέλτιστον λέγων, ἃ ἂν λέγῃ ἄλλο τι οὐκ εἰκῇ ἐρεῖ, ἀλλ' ἀποβλέπων πρὸς τι; ὥσπερ καὶ οἱ ἄλλοι πάντες δημιουργοὶ [βλέποντες] πρὸς τὸ αὐτῶν ἔργον ἕκαστος οὐκ εἰκῇ ἐκλεγόμενος προσφέρει [πρὸς τὸ ἔργον τὸ αὐτῶν,] ἀλλ' ὅπως ἂν εἰδὸς τι αὐτῷ σχῇ τοῦτο ὃ ἐργάζεται. οἷον εἰ βούλει ἰδεῖν τοὺς ζωγράφους, τοὺς οἰκοδόμους, τοὺς ναυπηγούς, τοὺς ἄλλους πάντας δημιουργούς, ὅντινα βούλει αὐτῶν, ὡς εἰς τάξιν τινὰ ἕκαστος ἕκαστον τίθῃσιν ὃ ἂν τιθῇ, καὶ προσαναγκάζει τὸ ἕτερον τῷ ἑτέρῳ πρέπον τε εἶναι καὶ ἀρμόττειν, ἕως ἂν τὸ ἅπαν συστήσῃται τεταγμένον τε καὶ κεκοσμημένον πρᾶγμα· καὶ οἱ τε δὴ ἄλλοι δημιουργοὶ καὶ οὓς νυνδὴ ἐλέγομεν, οἱ περὶ τὸ σῶμα, παιδοτρίβαι τε καὶ ἰατροί, κοσμοῦσί που τὸ σῶμα καὶ συντάττουσιν. ὁμολογοῦμεν οὕτω τοῦτ' ἔχειν ἢ οὔ;

Then let's see, considering calmly this way, whether any of these men proved to be virtuous. Come now, the good man who speaks with a view to the best, surely he won't speak at random, but will look to something? He will be like all other craftsmen; each of them selects and applies his efforts with a view to his own work, not at random, but so that what he produces will acquire some form. Look for instance if you like at painters, builders, shipwrights, all other craftsmen whichever one you like; see how each of them arranges in a structure whatever he arranges, and compels one thing to be fitting and suitable to another, until he composes the whole thing arranged in a structure and order. All craftsmen, including those we were talking of just now, gymnastic-trainers, and doctors form the body into order and structure, don't they? Do we agree that this is so, or not? *Grg.* 503d-504a

Callicles refuses to consider order as a principle that has a value in itself. The praise of excess is correlative to the devaluation of everything that represents order understood as an organization based on rules, measures and on the notion of equality. By elevating

*pleonexia*, he lowers equality to an arbitrary and artificial notion which has no foundation or positive significance. Now, order (*kosmos*) finds its origin precisely in the correct composition (*taxis*) of the elements and in the existence of rules or measures. That is why part of Socratic criticism will focus on the idea that a regulated and measured life is preferable to the excesses of the passions. Thus Socrates describes two kinds of opposed lives, that of the temperate and that of the intemperate by showing the superiority of the first over the second.

Then he must show the superiority of notions of harmonious order over the notions of disorder, which Socrates likens to excesses and *pleonexia*. To advance his argument, Socrates takes, as usual, a technical detour (*Grg.* 464–466). The aim is to show that any technique is based on the knowledge of order and proposes as a goal the right composition or proportion. Harmony consists in putting together the elements and the parts to form an orderly and properly adjusted totality: beauty does not reside in disproportion, as Callicles pointed out concerning the excess of desires, but in the measured and proportioned adjustment of parts. The works of art of the painter, the architect, and so on, all obey this rule; the beauty of art is thus a *kosmos*.

In the passage quoted above (*Grg.* 503 ff.), Socrates is arguing, from analogy, that a good soul is a well-ordered one just as a good house is an orderly one and a healthy

body is an orderly one<sup>68</sup>. As other passages in the *Gorgias* elaborate, the excellence or virtue (*aretē*) of each thing is something ordered by a structure (*taxis*). A good and ordered, i.e. healthy, body would be one that is well-conditioned as a result of gymnastic training; a good and ordered house would one in which has been well designed and well built. Socrates goes on to argue that an orderly soul is *sophrōn*, and that a *sophrōn* soul is good (*agathos*). By transitivity, perhaps, we could infer that an orderly (*kosmiōs*) soul is good (*Grg.* 506b–508c).

In his commentary on this passage (504d 1–3), the Neoplatonist Olympiodorus suggests that temperance (*sophrosynē*) is the ‘order’ (*kosmos*) of the parts of the soul and justice the ‘arrangement’ (*taxis*). Olympiodorus assumes that ‘ordering of the soul’ indicates the virtues as they are described in *Republic* IV. This is especially interesting because Plato uses the term “*harmonia*” to refer to the state of the just and moderate soul in *Republic* IV (e.g. at 444); this observation of Olympiodorus lends some support to my contention that “*kosmos*,” “*taxis*,” and “*harmonia*” all belong to the same semantic field and, at least in terms of basic meaning, are often used interchangeably in similar contexts.

In the *Gorgias*, Socrates often recommends a life of self-control as preferable to a life of the limitless pursuit of desires (e.g. at 491d). This claim depends upon a purely

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<sup>68</sup> This is somewhat reminiscent of the account in *Vict.* discussed in Chapter 1. There, however, we were told that the builder *harmonizes* components to build a house and, similarly, particles must harmonize within a human body or embryo.

formal argument: something's good depends upon its orderliness and its being arranged according to the craft appropriate to it. Calicles has himself already agreed that since there are some bad pleasures, some *technē* is required to sort out the beneficial ones from their opposites (*Grg.* 499d-e). The argument does not tell us what this good is for a human being, only that a life in pursuit of limitless pleasure could not be it. It *could* not tell us what this good is without identifying *whose* good exactly we are talking about. In later dialogues, *harmonia* provides us with a similarly formal understanding of what the good is.

Socrates' characterization of virtue as psychic order (*kosmos*) is also striking because it introduces some ideas that are prominent in later dialogues, such as the idea that *kosmos* is a function of the universe and human society as well as the virtuous *psychē* and that mathematical proportion (later to be understood as *harmonia*) can serve as an ethical norm. This connection is made even clearer when Socrates claims that the order and self-control required for justice and for happiness in the individual soul is somehow akin to the cosmic order with its geometrical proportion (507d).

Anton (1980, p. 51) has also argued that the *Gorgias* presents us with a developed medical theory and there is:

[a] presupposition that there is a deep relationship between the art of medicine, the moral quest, philosophical ethics and the art of statesmanship, and also, an ontological presupposition regarding an unbreakable relationship between parts and wholes of souls and bodies alike.

I contend that the *Gorgias* gives us ample evidence that the goodness of the body, the soul, as well as the *kosmos*, consists in a state of order and, importantly, that there is a relationship between these different domains. As we will see, this idea plays an important role in the later dialogues.

Socrates is aware that it might not be enough to show that the good and the beautiful in crafts or even in medicine requires good order since a successful refutation of the Calliclean idea of the good would require the exclusion of excess in nature as well as artifice. This is why Socrates' final argument generalizes the function of proportion and order in all areas of thought: ethics, politics, and physics (or, rather, cosmology).

φασὶ δ' οἱ σοφοί, ὦ Καλλίκλεις, καὶ οὐρανὸν καὶ γῆν καὶ θεοὺς καὶ ἀνθρώπους τὴν κοινωνίαν συνέχειν καὶ φιλίαν καὶ κοσμιότητα καὶ σωφροσύνην καὶ δικαιοσύνην, καὶ τὸ ὅλον τοῦτο διὰ ταῦτα κόσμον καλοῦσιν, ὦ ἑταῖρε, οὐκ ἀκοσμίαν οὐδὲ ἀκολασίαν. σὺ δέ μοι δοκεῖς οὐ προσέχειν τὸν νοῦν τούτοις, καὶ ταῦτα σοφὸς ὢν, ἀλλὰ λέληθέν σε ὅτι ἡ ἰσότης ἢ γεωμετρικὴ καὶ ἐν θεοῖς καὶ ἐν ἀνθρώποις μέγα δύναται, σὺ δὲ πλεονεξίαν οἶει δεῖν ἀσκεῖν· γεωμετρίας γὰρ ἀμελεῖς.

Now the wise men say, Callicles, that heaven and earth, gods and men are bound by community and friendship and order and temperance and justice; and that is why they call this whole universe the 'world order'<sup>69</sup>, not

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<sup>69</sup> According to Jaeger (1986) the *Gorgias* is the first time that “*kosmos*” was used to mean an orderly system within the soul — the corresponding adverb “*kosmiōs*” had been used to signify orderly behavior, but never the noun. Dodds (1990) relates this passage to the Pythagoreans and argues that the use of “*kosmos*” is distinctively Pythagorean. However, I am in agreement with Kahn (2001, p. 54) that Dodds (and Jaeger) are guilty of overstatement since this sense of “world-order” is alluded to in Heraclitus and Parmenides and is used literally by Anaxagoras and Empedocles; Kahn contends, in addition, that the word might go back to the Milesians and, at any rate, the notion of cosmic order most certainly does.

'disorder' or 'intemperance', my friend. But I think you don't heed them, though you're wise yourself. You haven't noticed that geometrical equality<sup>70</sup> has great power among gods and men; you think you should practice taking more, because you are heedless of geometry. *Grg.* 508a

The most important – and novel – notion is that of geometrical equality; the science of geometry makes a somewhat abrupt appearance here. These two indications, allusive in the dialogue, are nevertheless at the center of the Platonic conception of the good. First, geometry is considered as an epistemological model: it makes it possible to establish the objectivity of knowledge and the notion of measurement. Then Plato promotes the notion of geometric equality. Excess rests fundamentally on inequality, inequality of nature and fact that would legitimize *pleonexia*. The negation of the principle of equality has major consequences not only on the city but also on the arts in general and on cosmology. Indeed, the principle of equality is at the origin of the conception of order according to Plato. This is the very meaning of the reference to geometrical equality, whose precisely determined nature can ground the notion of order.

While I will discuss the different kinds of means – geometrical, arithmetic, and harmonic – later in this dissertation, it is worth mentioning that “geometric equality” is best understood in relation to the geometric mean and proportion and refers to

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<sup>70</sup> I discuss the different kinds of equality in more detail in the last two chapters of this dissertation.



equality between two *ratios*. The geometric mean designates a number that is the intermediate between two extremes; the proportion is an equality of ratios and not an equality of quantities taken in isolation. The "ratio" is called *logos* and the act of knowledge incarnated by the *logos* is how to organize the elements according to rules and determined measures that are often mathematical or dialectical for Plato. The power of these proportions consists in their ability to unify elements that are inherently multiple.

A final important aspect of order in the *Gorgias* has been noted by Macé (2007) who compares the *Gorgias* with Gorgias' Encomium of Helen in order to show that ordered speech is able to impart order to the soul because *taxis* in *logos* is something that souls are able to participate in. He points out that there is an analogy – recurring throughout the *Gorgias* – between arts that have the soul as their object and arts that have the body as their object (Macé, 2007, p. 87). The passage quoted earlier (503–504) offers the clearest instance of this analogy since we learn there that what these different kinds of arts have in common is the fact that they produce order in their objects, whatever these objects might be. Let us revisit the first few lines:

Ἴδωμεν δὴ οὕτως ἄτρεμα σκοπούμενοι εἴ τις τούτων τοιοῦτος γέγονεν·  
φέρει γάρ, ὁ ἀγαθὸς ἀνὴρ καὶ ἐπὶ τὸ βέλτιστον λέγων, ἃ ἂν λέγῃ ἄλλο  
τι οὐκ εἰκῇ ἐρεῖ, ἀλλ' ἀποβλέπων πρὸς τι; ὥσπερ καὶ οἱ ἄλλοι πάντες  
δημιουργοὶ [βλέποντες] πρὸς τὸ αὐτῶν ἔργον ἕκαστος οὐκ εἰκῇ  
ἐκλεγόμενος προσφέρει [πρὸς τὸ ἔργον τὸ αὐτῶν,] ἀλλ' ὅπως ἂν εἰδὸς  
τι αὐτῷ σχῇ τοῦτο ὃ ἐργάζεται.

Then let's see, considering calmly this way, whether any of these men proved to be virtuous. Come now, the good man who speaks with a view to the best, surely he won't speak at random, but will look to something? He will be like all other craftsmen; each of them selects and applies his efforts with a view to his own work, not at random, but so that what he produces will acquire some form. *Gorgias*, 503 e1-5

Macé (2007), in his discussion, contends plausibly that the “*eidōs*” (form) in the passage above is the internal unity that is proper to the ordered entity. Verity Harte (2002) has noted that it is often the case, for Plato, that normative terms of value are concomitant upon the presence of structure; while this idea is fully developed in late dialogues such as the *Philebus*, we can also see evidence of it in the *Gorgias* when, at 504a-b, the ordered state is described as worthy and the lack of order is described as wretched.

First, it is established that justice is something that belongs to the soul. Next, the soul is compared to the body and to other entities and we learn that, in every case, the good state is an orderly one. Finally, these ordered states are given their proper names:

{ΣΩ.} Τί οὖν ὀνομά ἐστιν ἐν τῷ σώματι τῷ ἐκ τῆς τάξεώς τε καὶ τοῦ κόσμου γιγνομένῳ; / {ΚΑΛ.} Ὑγίειαν καὶ ἰσχὺν ἴσως λέγεις. / {ΣΩ.} Ἐγώ γε. τί δὲ αὖ τῷ ἐν τῇ ψυχῇ ἐγγιγνομένῳ ἐκ τῆς τάξεως καὶ τοῦ κόσμου; πειρῶ εὐρεῖν καὶ εἰπεῖν ὥσπερ ἐκεῖ τὸ ὄνομα. / {ΚΑΛ.} Τί δὲ οὐκ αὐτὸς λέγεις, ὦ Σώκρατες; / {ΣΩ.} Ἄλλ' εἴ σοι ἡδιόν ἐστιν, ἐγὼ ἐρῶ· σὺ δέ, ἂν μὲν σοι δοκῶ ἐγὼ καλῶς λέγειν, φάθι, εἰ δὲ μή, ἔλεγγε καὶ μὴ ἐπίτρεπε. ἐμοὶ γὰρ δοκεῖ ταῖς μὲν τοῦ σώματος τάξεσιν ὄνομα εἶναι ὑγεινόν, ἐξ οὗ ἐν αὐτῷ ἡ ὑγίεια γίγνεται καὶ ἡ ἄλλη ἀρετὴ τοῦ σώματος. [...] {ΣΩ.} Ταῖς δέ γε τῆς ψυχῆς τάξεσι καὶ κοσμήσεσιν νόμιμόν τε καὶ νόμος, ὅθεν καὶ νόμιμοι γίγνονται καὶ κόσμιοι· ταῦτα δ' ἐστὶν δικαιοσύνη τε καὶ σωφροσύνη.

Socrates: Then what's the name for what comes to be in the body from structure and order?/Callicles: I supposed you are speaking of health and

strength./S: I am. And what's the name for what comes to be in the soul from structure and order? Try to find the name for this as for the body./C: And why don't you say it yourself, Socrates?/S: Well, if it pleases you more, I'll say it myself. But you, if you think I speak well, agree, and if you don't, question me, and don't give in to me. I think that the name for the structures of the body is healthy (*hygieinon*) from which health and the rest of the bodily excellence (*aretē*) come to be in the body. [...] And for the structures and orderings of the soul the name is 'lawful' and 'law' from which people become lawful and orderly; and these are justice and temperance. 504 b7 -d2

Thus an ordered body is healthy and possesses all bodily *aretai* and an ordered soul is lawful and possesses psychic *aretai* which here are described as justice and temperance (*dikaiosynē* and *sophrosynē*).

Let us also recall that the *Gorgias* has two primary tasks, which are not obviously connected: exploring the nature of justice and offering a criticism of rhetoric. The discussion of order unites these two. The doctor is responsible for restoring bodily order and the house builder imposes structure on the material constituents of a house – all that remains to be established is the craftsman who is responsible for bringing about this orderly state in the human soul. According to the *Gorgias*, it seems that the speech of the good man is that which brings about order in the soul – and it is here that the discussion about rhetoric and the discussion about justice are clearly connected for someone who makes bad speeches will harm the soul and lead it away from justice whereas someone who makes good speeches will do the opposite:

Οὐκοῦν πρὸς ταῦτα βλέπων ὁ ρήτωρ ἐκεῖνος, ὁ τεχνικός τε καὶ ἀγαθός, καὶ τοὺς λόγους προσοίσει ταῖς ψυχαῖς οὓς ἂν λέγῃ, καὶ τὰς πράξεις ἀπάσας, καὶ δῶρον ἐάν τι διδῶ, δώσει, καὶ ἐάν τι ἀφαιρῇται, ἀφαιρήσεται, πρὸς τοῦτο αἰετὸν τὸν νοῦν ἔχων, ὅπως ἂν αὐτοῦ τοῖς πολίταις δικαιοσύνη μὲν ἐν ταῖς ψυχαῖς γίγνηται, ἀδικία δὲ ἀπαλλάττηται, καὶ σωφροσύνη μὲν ἐγγίγνηται, ἀκολασία δὲ ἀπαλλάττηται, καὶ ἡ ἄλλη ἀρετὴ ἐγγίγνηται, κακία δὲ ἀπίη.

It is by having in view those things that the orator, he who is skilled and good (*technikos te ka agathos*), will present his speeches to the souls he addresses, and in all his actions, when he gives what he gives and when he carries away what he carries away, he'll always have his mind directed towards this, to bring justice into the souls of citizens (*tois...gignetai*) and to rid them of injustice, to bring about temperance and to rid them of intemperance and to generate other virtues and get rid of vice. *Gorgias*, 504d 4 – e 3

In these passages, there is a causal link between the order present in the speech of the good orator and the order present in the souls that he addresses. The idea that something external, possessing order, can bring about order in another entity that perceives it recurs, as we will see, in later dialogues with the order being specified as *harmonia*.

The *Gorgias* presents us with early Platonic views of justice, moderation, and virtue in general and we learn that these consist in a proper ordering that is opposed to the *pleonexia* – in deed as well as speech – of a tyrannical figure such as Callicles. Second, we learn that there is an isomorphism between the soul, the body, and the *kosmos*. Third, we can see that this ordering has mathematical underpinnings, although

this is discussed very briefly. Finally, order is something that can be instilled in entities by other entities possessing it.

We have, in this dialogue, a discussion of order that is not *harmonia* but that, nonetheless, shares many characteristics with it. It is possible that one of the reasons that psychic order in the *Gorgias* could not be described as a *harmonia* is that *harmonia* requires the existence of a mereologically complex entity and we have not, at this stage, been introduced to the idea of a mereologically complex soul. The *Phaedo*, however, does introduce the idea that the soul is composed out of various elements and it is here that we are presented with the hypothesis that the soul could be a *harmonia*. Let us, then, turn to it.

## Chapter 3: *Harmonia* in the *Phaedo*

In terms of mere frequency, the *Phaedo* is the first Platonic dialogue where *harmonia* plays a prominent role. The context, though, is Socrates' rejection of Simmias' claim that the soul is a *harmonia*. The *Phaedo* is, nonetheless, of great importance to anyone attempting to reconstruct Plato's positive doctrine of *harmonia* because it tells us what Platonic *harmonia* is not and, further, through Socrates' refutation of Simmias, we learn something about what Platonic *harmonia* might be.

In this chapter, I will discuss Simmias' soul-*harmonia* thesis as well as Socrates' refutation of it. I begin with Simmias' thesis that the soul is a *harmonia* and attempt to explain what he could have meant by it. Following this, I will discuss the three arguments that Socrates offers against Simmias; this should help us better understand Simmias' thesis and should also give us some indication of Plato's positive views. I will conclude this chapter with some observations on Platonic *harmonia*.

### I. Simmias' Soul-*Harmonia* Thesis

The *Phaedo* addresses the question of the immortality of the soul and in the course of the dialogue, Socrates presents his interlocutors — Simmias, Cebes, and later Echecrates — with at least four different arguments for the immortality of the soul. The discussion of *harmonia* begins after Socrates has already presented three arguments for

the immortality of the soul and follows immediately after an argument for the immortality of the soul that is commonly known as the “Affinity Argument”. According to the Affinity Argument, an argument from analogy, the soul is akin to the divine Forms since it is immutable, invisible, and divine and, consequently, imperishable. Simmias offers a counter-argument:

Ταύύτη ἔμοιγε, ἦ δ' ὅς, ἦ δὴ καὶ περὶ ἀρμονίας ἂν τις καὶ λύρας τε καὶ χορδῶν τὸν αὐτὸν τοῦτον λόγον εἴποι, ὥς ἡ μὲν ἀρμονία ἀόρατον καὶ ἀσώματον καὶ πάγκαλόν τι καὶ θεϊόόν ἐστιν ἐν τῇ ἡρμοσμένῃ λύρᾳ, αὐτὴ δ' ἡ λύρα καὶ αἱ χορδαὶ σώματά τε καὶ σωματοειδῆ καὶ σύύνθετα καὶ γεώδη ἐστὶ καὶ τοῦ θνητοῦ συγγενῇ.

I think in this way,” he said; “one could surely use the same argument about the *harmonia* of a lyre and its strings, and say that the *harmonia* is something unseen and incorporeal and very lovely and divine in the tuned lyre while the lyre itself and its strings are corporeal bodies and composite and earthy and akin to the mortal. *Phd.* 85e 3 — 86a 3<sup>71</sup>,

Simmias goes on to say that we could claim that the *harmonia* continues to exist somewhere even when the lyre is thoroughly destroyed because the *harmonia* is akin to the immortal. This is supposed to be an absurd conclusion because Simmias takes it to be commonly believed that the *harmonia* of the lyre is destroyed *before* the lyre is.

However, he follows up this counter-argument by saying that this *is* actually what ‘we’ take the soul to be<sup>72</sup>. So Simmias’ counter-example to the Affinity Argument

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<sup>71</sup> *Phaedo* translation are mine unless otherwise indicated.

<sup>72</sup> “οἶμαι ἔγωγε καὶ αὐτόν σε τοῦτο ἐντεθυμῆσθαι, ὅτι τοιοῦτόν τι μάλιστα ὑπολαμβάνομεν τὴν ψυχὴν εἶναι...”, *Phd.* 85b 5–6.

paves the road for Simmias' own theory of the soul and it is a theory which seeks to establish, *pace* Socrates, that the soul is mortal:

[...]έντεταμένον τοῦ σώματος ἡμῶν καὶ συνεχομένου ὑπὸ θερμοῦ καὶ ψυχροῦ καὶ ξηροῦ καὶ ὑγροῦ καὶ τοιούτων τινῶν, κρᾶσιν εἶναι καὶ ἁρμονίαν αὐτῶν τούτων τὴν ψυχὴν ἡμῶν, ἐπειδὴν ταῦτα καλῶς καὶ μετρίως κρᾶθῃ πρὸς ἄλληλα – εἰ οὖν τυγχάνει ἡ ψυχὴ οὔσα ἁρμονία τις, δῆλον ὅτι, ὅταν χαλασθῇ τὸ σῶμα ἡμῶν ἀμέτρως ἢ ἐπιταθῇ ὑπὸ νόσων καὶ ἄλλων κακῶν, τὴν μὲν ψυχὴν ἀνάγκη εὐθὺς ὑπάρχει ἀπολωλέναι, καίπερ οὔσαν θειοτάτην, ὥσπερ καὶ αἱ ἄλλαι ἁρμονίαι αἱ τ' ἐν τοῖς φθόγγοις καὶ ἐν τοῖς τῶν δημιουργῶν ἔργοις πᾶσι, τὰ δὲ λείψανα τοῦ σώματος ἐκάστου πολὺν χρόνον παραμένειν, ἕως ἄν ἡ κατακαυθῇ ἢ κατασαπῇ – ὅρα οὖν πρὸς τοῦτον τὸν λόγον τί φήσομεν, εἴαν τις ἀξιοῖ κρᾶσιν οὔσαν τὴν ψυχὴν τῶν ἐν τῷ σώματι ἐν τῷ καλουμένῳ θανάτῳ πρώτην ἀπόλλυσθαι.

[...]our body is kept in tension, as it were, and held together by hot and cold, dry and wet, and the like, and our soul is a blending and *harmonia* of these same things when they're blended with each other in due proportion. If, then, the soul proves to be some kind of *harmonia*, it's clear that when our body is unduly relaxed or tautened by illness and other troubles, then the soul must perish at once no matter how divine it may be, just like the other *harmoniai*, those in musical notes and in all the products of craftsmen; whereas the remains of each body will last for a long time, until they're burnt up or rot away. Consider what we shall say in answer to one who considers the soul to be a mixture of bodily elements and to be the first to perish in the process we call death. *Phd.* 86 b5-d3

The problem here lies in reading this and the previous passage together. Simmias begins by offering an analogy of sorts between the *harmonia* and lyre and the soul and body, but his subsequent claim seems to be stronger: he moves from merely comparing



the soul to a *harmonia* to identifying the soul with a *harmonia*. In order to make sense of the argument we must begin by asking what exactly is meant by *harmonia* here and whether Simmias is using *harmonia* in the same way throughout.

Recall that *harmonia* is *not* identical to the English cognate harmony since its primary meaning is not musical; it can be understood to a fitting together of disparate elements, whether in music, universe, the body politic, or the body of man. As discussed in Chapter I, *harmonia* could mean physical fitting together, fitting together of notes, ratio or some structure of objective relations, octave, tetrachord, agreement, a metaphysical principle of union.

Now since Simmias is talking about the *harmonia* of the lyre and its strings, “fitting together of notes” seems like a good first stab at what he means; the fact that Simmias refers to the *harmonia* in a fitted or well-tuned (ἡρμιοσμένη) lyre lends support to this. If this is what he means by *harmonia*, we can take Simmias to be saying that the soul is a structure just as a musical *harmonia* is — incorporeal, all-beautiful etc. Simmias’ later description of the soul provides us with more hints — he describes the soul as a blending (*krasis*) and *harmonia*. Thus, the notion of *harmonia* here involves the blending of some entities; this is still consistent with the “musical *harmonia*” interpretation. However, Simmias mentions the *harmoniai* in musical notes as well as the *other harmoniai*, and that seems to imply that — in this passage at least — he is using *harmonia* in a broader sense. He moves from comparing the soul to a beautiful (presumably)

musical *harmonia* of a lyre to speaking of it as a kind of *harmonia* comparable to the many *harmoniai*, not only those in music but also in other crafts.

The initial claim seems to be that the soul is to the body what the *harmonia* is to the lyre. By this, Simmias means that the soul and the *harmonia* (understood as the music of the lyre) are ontologically dependent on the body and the lyre respectively. However it seems we are given more details about the precise way in which the soul is dependent on the body in the second passage — our soul is a *krasis* (blending) of qualitative opposites and, because of this dependence, it is destroyed when the corporeal things that constitute it are destroyed. Since the *harmonia* of a lyre is supposed to be analogous to the soul and the body, the same should hold true of it, but it is hard to see how a *structure* or a melody could be destroyed when a lyre is, if this is what is meant by *harmonia*. For one, they are not *dependent* on any particular lyre. The only thing that we know with *certainty* is that the *harmonia* in question is in some way ontologically dependent on the lyre in question and so too is the soul on the body.

Here is a summary of the problems so far: first, Simmias describes the body, in contrast to the soul, as a composite (*syntheton*); the same is subsequently said of the *soul* (it is a *krasis*); second, Simmias moves from a narrower sense of *harmonia* to a broader one: first, he talks about the *harmonia* of the lyre, but then he mentions the *harmoniai* (in the plural); third, Simmias begins by comparing the soul to something eternal and incorporeal but then describes it as a *harmonia* (in the sense of mixing) of qualitative

opposites. Can we take Simmias to be espousing materialism about the soul? If so, then what are we to make of his earlier claim that the soul is divine and incorporeal?

The analogy of the earlier passage leads one to think that the relationship between the soul and the body will be a relationship between an immaterial and material entity wherein the immaterial entity is ontologically dependent on the material one. However, we have the evidence of the later passage that the soul is a *krasis* of qualitative opposites — and *krasis* was a term used most frequently by the medical writers to refer to a compounding of material entities<sup>73</sup>. The primary sense of it in Plato's time was literal mixing<sup>74</sup>. The LSJ cites a “metaphorical” use of the term but the only passage mentioned in support of that is the passage quoted above.

In response to these problems, CCW Taylor (2008, 74-5) and David Gallop (1990, 148-9) follow Aristotle in distinguishing distinct possibilities for what Simmias' thesis might be. He could be claiming that

- 1) the soul is identical with the ratio or formula according to which the elements are combined to form the living man, or that
- 2) the soul is identical with the mixture or combination of elements according to that formula, or that

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<sup>73</sup> I discuss this briefly in Chapter 1, Section VII.

<sup>74</sup> See Montanari (1979: 93ff.) for more on *krasis* and *kerannumi*.

3) the soul is identical with a state of the bodily elements, *viz.* the state of being combined according to that formula.

Scholarly consensus veers towards the third option — the soul is a tuned state of the body just as a *harmonia* is a tuned state of the lyre. Such a reading takes the soul to be ontologically dependent on the body without being made out of the same material constituents as the body. Such a reading does not attribute materialism to Simmias.

However, all these interpretations assume that the “*harmonia*” as used in the counter-argument to the Affinity Argument is the same as the “*harmonia*” that Simmias ascribes to the soul because these readings respond to the problems that arise when we read the passages together. I contend, though, that there is little reason to favor such an approach and we do not, in fact, have to read the two passages together.

First, not only is it the case that there are many kinds of *harmonia* (see Chapter 1), Simmias *explicitly* talks about the various *harmoniai*. Plato also makes an ironic reference to Kadmos’ wife, Harmonia and then makes a pun on “*harmonia*” when he says that the different claims made by Simmias should “harmonize” – he was clearly aware of the many possible uses of our word. Second, Simmias refers to the *harmonia* of the soul as “*harmonia tis*” – a kind of *harmonia* – while he makes no such concession when talking about the *harmonia* of the lyre. Once we recognize that “*harmonia*” can be used in different senses in different passages, one of our puzzles stands resolved, namely that of reading the two apparently inconsistent passages together. This will also

have an influence on what we take Simmias' soul-*harmonia* thesis to be. If we stop trying to show, contrary to textual evidence, that Simmias takes the soul to be immaterial, the second possibility — that the soul is identical to the mixture of the elements — is the most natural reading. On this reading, Simmias is espousing a straightforwardly materialist thesis that Socrates then goes on to refute. In the first passage, “*harmonia*” is used in an attempt to trip up Socrates' Affinity Argument; the second, however, is a legitimate theory in its own right.

An important piece of evidence is Simmias' statement that “*we* take” the soul to be such a thing. As commentators, both ancient and modern, have realized, there is some ambiguity about who is included when Simmias says “ὑπολαμβάνομεν”. The ancient commentators were more or less unanimous in their attribution of this doctrine to the Pythagoreans. Olympiodorus (*In Phd.* 10.2), Plotinus (IV 7.8) and Philoponus (*in de An.* 70) refer to the Pythagoreans, and Macrobius (DK 44A23) refers specifically to Philolaus of Croton. However, as Gottschalk (1971) has pointed out, while they all ascribe the thesis that the soul is a *harmonia* to the Pythagoreans, Philoponus and Plotinus do not identify *Simmias'* version of it with that of the Pythagoreans. Nonetheless, this is a view that has prevailed with many modern commentators, and there are good reasons for this.

The fragments of Philolaus are our only evidence for the doctrines of early Pythagoreanism and, as I discussed in Chapter 1, *harmonia* plays an important role in

his cosmology — it unites opposites in the guise of unlimited things and limited things in order to create the world-order (DK44 B 1, 2, 6). Simmias and Cebes are even described as students of Philolaus (*Phd.* 61 d). Further, Echecrates, who was supposedly a Pythagorean (*DL* VIII, 46), says that he is drawn to the view that the soul is a ἁρμονία (*Phd.* 88 d) and always has been. All of these can readily be taken as evidence that Simmias' thesis is Pythagorean in origin.

However, an immediate problem with this possibility is that we tend to associate Pythagoreanism with the doctrine of transmigration of souls on the evidence of early *testimonia* and, if the soul were truly a material *harmonia*, it surely could not transmigrate. The Pythagoreans probably believed in the immortality of the soul whereas Simmias offers the description of the soul as a *harmonia* in order to disprove its immortality. Philolaus may have believed that the soul was a *harmonia* — even though he there is no explicit mention of this in his extant fragments — but we have little reason to believe that he regarded the soul as mortal and perishable and that his account of the soul as *harmonia* is what Simmias is reporting.

Iwata (2015, 56–9) offers a further argument that problematizes the attribution of this thesis to the Pythagoreans. One could respond to my initial worry by claiming that, based on the extant fragments of Philolaus, we do not have sufficient grounds to claim that he endorsed the so-called Pythagorean doctrine of transmigration. However, Socrates' remarks at 61 d–e suggest that a belief in immortality and

transmigration was indeed shared by Philolaus. Iwata (2015) agrees with Archer-Hind (1894), Gallop (1975), and Hackforth (1955) that Simmias is referring to the general public when he claims that this is what “we” take the soul to be. Huffman (1993) thinks that it refers to Simmias and Cebes, and Rowe (1993) that it refers to the Platonic circle. Burnet suggests that “we” could refer to either people in general or a heterodox Pythagorean circle, and there is, of course, the prevailing orthodoxy that “we” refers to Pythagoreans. I contend that the most likely candidate for “we” is “we materialists” – it is highly likely that Simmias is referring to a common-sense idea shared by the general public.

Dixsaut (1991, p. 359), in her commentary on this passage, reminds the reader of the fragment of Alcmaeon of Croton where he describes health as an equilibrium (*isonomia*) of opposites such as hot/cold and wet/dry. The most obvious problem with connecting Alcmaeon to this passage is the fact that he describes health *as isonomia*. First, Simmias is not claiming that a healthy soul *has* a *harmonia* — indeed, as we will see in the following sections, that is something that Plato himself agreed with — but rather that a soul *is* a *harmonia*. Second, *isonomia* entails a 1:1 ratio unlike *harmonia*, which entails that one or more of the relata dominate over the others. The octave, which is the ratio 2:1, is a paradigmatic instance of a *harmonia*. Simmias uses “*harmonia*” to describe the condition of the soul and this term shouldn’t be understood loosely or conflated with other terms.

Even though Alcmaeon is unlikely to have been a direct influence, this view certainly carries echoes of other pre-Platonic natural philosophers. Bernhardt (1971, pp. 76–93) and Dixsaut (1999, p. 116) both point out the similarity between Simmias’ thesis and Heraclitus’ doctrine of the harmony of opposites (see Chapter 1). Again, this is a fair supposition. Dixsaut (1999, p. 114) also points out the possible influence of Empedocles and Parmenides. Given the scope of this section, I cannot comprehensively refute any of these possibilities or establish the ‘true’ source of such a view. Indeed, such a task might not even be worth pursuing. I would, however, would like to suggest yet another alternative that could even serve as a complement to the existing ones.

The author of the Hippocratic treatise *On Regimen* reports a view of soul that bears strong resemblances to Simmias’ account<sup>75</sup>. As I showed in Chapter 1, he describes the soul as a mixture of fire and water: “ἔσέρπει δὲ ἐξ ἄνθρωπον ψυχὴ πυρὸς καὶ ὕδατος σύγκρησιν ἔχουσα, μοίρην σώματος ἀνθρώπου.” (*Vict.*, 7.2)<sup>76</sup>. The soul has parts and the character of the soul depends on these parts attaining the “ἁρμονίης

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<sup>75</sup> Scholars have detected the influence of *On Regimen* in other works within the Platonic corpus as well. Bury (1932) thinks that Aristophanes’ speech in the *Symposium* parodies the kind of theory of the sexes that can be seen in *On Regimen*; Craik (2001) suggests that Plato used ideas from *On Regimen* in the speech of Erixymachus. Joly (1983, 1961) has compared the methodological passage from the *Phaedrus* (270) with *On Regimen*. For a detailed account of the philosophical legacy of *On Regimen*, see Bartos (2015, 237–280)

<sup>76</sup> Simmias speaks of wet and dry rather than fire or water, but the author of this Hippocratic treatise makes explicit the connection between fire and dryness and water and moistness when he refers to them as “ὕδατος ξηροῦ καὶ πυρὸς ὑγροῦ” (*Vict.* 7.10).



ὁρθῆς” (*Vict.*, 8.11). I will not go into the details that I have already discussed – I showed how, in the case of embryology, the opposites are male and female seeds, which are themselves made up of fire and water, and they must be arranged according to the principle of *harmonia* in order for the eventual creation of a viable embryo. The embryo is more or less identified with the proper *harmonia* of its constituents. Similarly, in the *Phaedo*, Simmias identifies the soul with a *harmonia*. While we have evidence that earlier thinkers viewed *harmonia* as a positive state, somatic, psychic, or otherwise, this is the only passage where an organism is more or less identified with a *harmonia*. For Simmias, a soul would cease to be a soul if it weren’t a *harmonia* of its constituents whereas other pre-Platonic thinkers would claim that a soul would cease to be a good soul if it lost its *harmonia*. In the Hippocratic passage, too, the embryo would cease to be an embryo without *harmonia*.

*On Regimen* is also contains many ideas that are familiar to us from earlier pre-Platonic thinkers. The passage on embryology brings to mind not only Philolaus but also Parmenides (B17); later in the treatise, author echoes Heraclitus (B8) when he claims that the finest harmony comes from diversity. My contention that *On Regimen* is a likely source for Simmias’ thesis need not, then, be in necessarily in tension with those who have detected Pythagorean, Heraclitean, or other pre-Platonic influences. I suggest that it is this syncretic account from the Hippocratic tradition, containing elements of Heracliteanism and Philoic metaphysics, that is evident in Simmias’

contention that the soul is a *harmonia* of its physical constituents. This suggestion also lends credence to the view that Simmias' thesis is a materialist one — the soul is simply made out of material opposites and, when these opposites are no longer in a *harmonia*, it ceases to be. We will find that there is yet more evidence for this reading when we consider Socrates' refutation of Simmias' thesis – I argue, in the next section, that Socrates' counter-arguments could only purport to be successful if they were directed at a materialist thesis.

### III. Socrates' refutation of Simmias' soul-*harmonia* thesis

There is some disagreement about the precise number of counter-arguments to Simmias offered by Socrates. The ancient tradition, represented by Philoponus, identifies four arguments whereas contemporary commentators usually identify two main arguments and a third subsidiary one. To get into all the textual problems in these passages and to lay out the responses of all the commentators is beyond my scope at present; I will just offer what I take to be a plausible and commonly accepted interpretation.

Socrates begins by reminding Simmias that he agreed to the premises and conclusion of the earlier argument from recollection (*Phd.* 72e-78b). According to this, the soul acquires knowledge of the Forms before it is incarnated in a mortal body and

we obtain knowledge when we recollect this pre-natal knowledge. This argument establishes that the soul pre-exists the body. Now, it seems fairly obvious that a composite cannot pre-exist its components and, if the soul is a *harmonia*, it follows that it is a composite of some kind. If that is the case, it cannot pre-exist the bodily elements. However, the recollection argument only makes sense if the soul *does* pre-exist the body and, if Simmias is to stand by his earlier acceptance of the recollection argument, he must let go of the claim that the soul is a *harmonia*. This is perhaps the most straightforward counter-argument and can be represented as follows (*Phd.* 91e-92e):

- 1) The soul is a composite *harmonia*. (Assume for *reductio*)
- 2) A composite can't pre-exist its components. (Premise)
- 3) The soul can't preexist its components. (1,2)
- 4) The soul pre-exists the body, i.e. its components, because learning is recollection. (Premise)
- 5) Therefore, the soul is not a composite *harmonia*. (2,4, by *reductio*)

Let's turn, now, to the following two arguments. The rest of Socrates' response takes place between 92e 4 and 95a 3, and the argument has been recognized to have an ABBA structure. I follow Gallop (1975) and Bostock (1986) in calling them Argument A and Argument B. In the text, we are first presented with some premises for Argument A, then some premises for Argument B, then Argument B itself, and

finally Argument A. Let's begin with Argument A (*Phd.* 92e4-93a10; 94b4-95a3), which is slightly more straightforward. The argument can be represented as follows:

- 1) The soul is a *harmonia*. (Assume for *reductio*)
- 2) The soul can control and oppose the body. (Premise)
- 3) A *harmonia* cannot control or oppose its own components because it cannot be in a state different than its components and cannot act or be acted on in a way different from its components. (Premise)
- 4) A soul cannot control and oppose the body. (1,3)
- 5) Therefore, the soul is not a *harmonia*. (2,4, by *reductio*)

In this argument, Socrates tries to show Simmias that the relationship between the soul and the body is not the same as that between a *harmonia* and its components. He describes how we don't always follow our bodily affections — there are cases when something opposes the hungry and thirsty body; this opposing and ruling part is the soul. There are a “thousand examples of the soul opposing the affections of the body” (*Phd.* 94c 2). However, the same is not true of a *harmonia* — it is clearly created by its components and cannot act in a way contrary to the way it is directed to by its components. Therefore, we either accept that the soul cannot control the body or we give up the idea that the soul is a *harmonia*. Let us turn, now, to the next argument.

We can read Argument B (93a11-c10; 93d1-94b3) as structured around a central dilemma: either *harmoniai* admit of degrees or they don't. If they do admit of

degrees, the soul couldn't be a *harmonia* since souls don't admit of degrees. From there the argument proceeds by disjunction elimination. If *harmoniai* don't admit of degrees, the moral differences between souls couldn't be accounted for. So on either horn, it turns out that the soul cannot be a *harmonia*. Let us now turn to the details of this difficult argument. The argument can be divided into two sub-arguments. The first of these is:

- 1) The soul is a *harmonia*. (Assume for *reductio*)
- 2) If a *harmonia* has been more or less harmonized, it will be more or less a *harmonia*. (Premise)
- 3) If it is a soul, it is not more or less a soul than another. (Premise)
- 4) The soul is more or less a soul, if it is a *harmonia*. (1,2)
- 5) Therefore, the soul is not a *harmonia* (1-4).

The argument then continues:

- 1) The soul is a *harmonia*. (Assume for *reductio*)
- 2) Some souls are good souls while others are bad souls. (Premise)
- 3) Good souls contain *harmonia* whereas bad souls lack *harmonia*. (Premise)
- 4) If it is a *harmonia* it will not be more or less a *harmonia* than another. (Premise)
- 5) That which is not more or less a *harmonia* participates in *harmonia* to an equal degree. (Premise)
- 6) The soul has not been more or less harmonized. (Premise)

- 7) The soul does not participate in *harmonia* or a lack of *harmonia*. (4,5, 6)
- 8) One soul does not participate more in goodness or badness than another.  
(2,3,7)
- 9) A soul could never participate in badness. (2,3,7)
- 10) All souls are equally good. (8,9)
- 11) Therefore, the soul is not a *harmonia*. (2, 10, by *reductio*)

The basic idea is that moral differences exist and that morally better souls contain a *harmonia*. Now if all souls were *identical* with this *harmonia*, none would be bad and this, clearly, is not the case. Here, Socrates seems to be pointing out that Simmias' claim rests on a category mistake — *harmonia* is not something that a soul *is* but something that a (virtuous) soul *has*.

One thing that all the counterarguments have in common is the assumption that Simmias is identifying the soul with a *harmonia* and not that the soul resembles a *harmonia* or some similar weaker claim. The counter-arguments would not succeed if Simmias' claim was weaker. According to the first argument, from recollection, the soul is a composite made from the body (in a certain state, presumably). If Socrates wasn't refuting a position that held the soul to be a composite (as would be the case if the view held the soul to be ontologically dependent, like a musical structure, but not necessarily a compound), then this argument would have no chance of succeeding. Argument A *also* assumes that the soul has bodily components as its constituents. Thus,

it seems that Simmias' thesis is that the soul is a *harmonia* and *krasis* of material opposites and this is the claim that Plato, via Socrates, argues against. There is also strong textual evidence for this reading:

Ἀλλὰ ἀνάγκη σοι, ἔφη, ὧ ξένε Θηβαῖε, ἄλλα δόξαι, ἐάνπερ μείνη ἥδε ἡ οἴησις, τὸ ἁρμονίαν μὲν εἶναι σύνθετον πρᾶγμα, ψυχὴν δὲ ἁρμονίαν τινὰ ἐκ τῶν κατὰ τὸ σῶμα ἐντεταμένων συγκεῖσθαι ...

But you'll have to think otherwise, my Theban friend, if you stick to this idea that *harmonia* is a composite thing, and that soul is a kind of *harmonia* composed of the bodily elements held in tension; ... (*Phd.* 92 a)

At the very least, Socrates takes Simmias to be making the strong claim that the soul is identical to a composite made up of bodily components. Therefore, in the *Phaedo*, all Socrates has done is refute the idea that the soul is identical to a material composite. So Platonic *harmonia* will not be a material *harmonia* and it will not be identified with any entity since its presence makes entities good. Already with the pre-Socratics we had the notion that *harmonia* was mostly axiologically positive or, in some cases, axiologically neutral (in Homer, for instance). Here, we are told in no uncertain terms that *harmonia* is axiologically positive.

We have also seen that there is more than one kind of *harmonia* being discussed in the *Phaedo*. Musical *harmonia* is spoken of as immortal, incorporeal, and divine. We learned that the other *harmoniai* are composites or syntheses of some kind and are ontologically dependent on their components. Argument B can be taken as the most

significant source of information for Plato's views on the moral significance of *harmonia*. There, Socrates tries to show Simmias that he was making a category mistake — a *harmonia* is not something that a soul *is* but something that a soul *has*. A virtuous soul is one whose parts are harmonized; however, a soul is still a soul even if it lacks *harmonia*. *Harmonia* is an earned unity, not just any unity.

The link between *harmonia* and goodness resurfaces in various later dialogues and was also discussed in the previous chapter on the *Gorgias*, where we were told that the goodness of the human soul consisted in it being in an orderly state. While the term used in the *Gorgias* is *kosmos*, it is a similar concept of order that is explained in terms of *harmonia* in the *Phaedo*. The role of *harmonia* in the *psychē* is fully developed in the *Republic* to which I turn next.



## Chapter 4: *Harmonia* in the *Republic*

Books I and II of the *Republic* introduce us to its central question: what is justice? Glaucon challenges Socrates to define justice and to show that justice is a good that is desired for its own sake as well as for the sake of something beyond it. Books III and IV constitute Socrates' response to this challenge. In these books, Socrates considers justice 'writ large and small' – first in the ideal city, his *kallipolis*, and then in the human soul. Ultimately, he argues that justice consists in a harmonious soul and that it is, thus, desired for its own sake and for the sake of happiness, since a disharmonious soul could never be happy. While *harmonia* figures prominently in his discussion of virtuous and vicious souls and constitutions, Socrates also spends considerable time on musical *harmonia* in his discussions of the educational program in the *kallipolis*.

*Harmonia* plays an important role in at least three different contexts in the *Republic*, and the last of these provides a link between all three : true harmonics must be related to abstract number and it is the presence of this abstract principle that makes harmonious entities good. The relationship between mathematics and the good laid out in *Republic* VII will help us see the connections between the different *harmoniai*. I will examine each of the contexts in which *harmonia* appears before turning to an explanation that links all these.

## I. *Harmonia* and *paideia*

Plato places great emphasis on the proper education of the guardians in his ideal city since virtues such as courage, piety, wisdom, and moderation are instilled by means of education (395c, 402b, 405a *inter alia*)<sup>77</sup>. *Mousikē*, broadly construed, plays an essential role in this educational program and Plato's censorship of certain *harmoniai* is, perhaps, the first thing that comes to mind when one mentions the role of *harmonia* in Plato's thought<sup>78</sup>. My goal here is to explain how, on Plato's account, audible *harmoniai* are capable of making impressions on the soul. We will begin with what he says about different kinds of modes and the characters they possess. However, we will supplement this with an account of Platonic *mimēsis* that should help us see us *how* these *harmoniai* act on the soul. As Lippmann (1964, p. 55) notes, "the imitative nature of music, its unified concreteness, and its ethical force are all importantly interrelated" and it is only by paying attention to this interrelation that we can attain any real insight into Plato's views on the role of *harmonia* in *paideia*.

In Book III of the *Republic*, Socrates and Glaucon discuss the technical aspects of the education that is to be imparted to the future guardians of the *kallipolis*. These

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<sup>77</sup> For an overview of the educational program of the *Republic*, see Jaeger (1947, pp. 198-365). Detailed discussions of the musical programme in the *Republic* can be found in Moutsopoulos (1959), and Ioannides (1985).

<sup>78</sup> *Mousikē* includes not only *harmonia* and *rhythmos* but also *logos* – it refers to anything that is within the domain of the Muses. Given the scope of this chapter, I focus mostly on *harmonia* but I should clarify that I am not conflating 'mousikē' and 'music'. Jaeger (*ibid.*) offers a comprehensive discussion of *mousikē* in the *Republic*.

future guardians are to be educated in *mousikē* and *gymnastikē*, and it is worth bearing in mind that “*mousikē*” includes not only *harmonia* (musical harmony) but also *rhythmoi* (rhythms) and *logoi* (discourses, words). In this section, I am interested specifically in how *harmoniai* influence the human soul.

There is a long history of describing the effects of music on humans, animals, and indeed all of nature, from the influence of Orpheus to the strange power of the Sirens and the abilities of Amphion, music has been seen to have a direct and strong effect on all those who hear it. In the Platonic corpus, musical harmonies serve an important pedagogical purpose because external musical *harmoniai* help in molding the human soul. In the *Protagoras*, for instance, we are told that a musical education allows the speech and movements of children to become more harmonious:

[...] καὶ τοὺς ῥυθμούς τε καὶ τὰς ἁρμονίας ἀναγκάζουσιν οἰκιοῦσθαι ταῖς ψυχαῖς τῶν παίδων, ἵνα ἡμερώτεροί τε ᾦσιν, καὶ εὐρυθμότεροι καὶ εὐαρμωστότεροι γιγνόμενοι χρήσιμοι ᾦσιν εἰς τὸ λέγειν τε καὶ πράττειν· πᾶς γὰρ ὁ βίος τοῦ ἀνθρώπου εὐρυθμίας τε καὶ εὐαρμωστίας δεῖται.

Protagoras: The teachers arrange the scores and drill the rhythms and scales into the children's souls, so that they become gentler, and their speech and movements become more rhythmical and harmonious. For all of human life requires a high degree of rhythm and *harmonia*. *Protagoras*, 326b 1–4<sup>79</sup>

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<sup>79</sup> Translations mine unless otherwise noted. *Republic* translations after the French of Leroux (2016).

This passage is part of a longer exposition by Protagoras on the standard educational program (*Prt.* 325c-327a). We learn that children were expected to memorize epic poetry's encomia of famous men so that they, too, could become like them. The passage quoted above describes how children learn lyric poetry, which was traditionally accompanied by the lyre – the *harmoniai* of the lyre and the *rhythmoi* of the poems reach the very souls of these pupils.

The importance of musical *harmonia* is also touched upon in the *Crito* (50 d5-e1) when the personified Laws of Athens ask Socrates whether he is grateful for the musical and physical education (*mousikē kai gymnastikē*) that his father gave to him. In the *Alcibiades*, too, the components of a good education are described as reading and writing, wrestling, and playing the *kithara* (106e 4-6). These views are all probably representative of earlier Greek views on education. In fact, Damon of Athens, a renowned authority on music from the Periclean age, is mentioned at least eight times by name in the Platonic corpus. Some of these instances are in the early dialogues. In the *Laches*, Damon is portrayed as a teacher of music, but not merely that:

Καὶ γὰρ αὐτῷ μοι ἑναγχος ἄνδρα προὔξενησε τῷ υἱεῖ διδάσκαλον μουσικῆς, Ἀγαθοκλέους μαθητὴν Δάμωνα, ἀνδρῶν χαριέστατον οὐ μόνον τὴν μουσικὴν, ἀλλὰ καὶ τὰλλα ὅποσόν βούλει ἄξιον συνδιατρίβειν τηλικούτοις νεανίσκοις.

For he [Socrates] recently introduced to myself a teacher of music for my son: Damon, the pupil of Agathocles, the most accomplished of all men not only so far as music is concerned, but also in every other respect as worthy to associate with as you could wish for young people of that age. *Laches*

The fact that Socrates and Damon knew each other and that Socrates appreciated Damon's skills to the extent of recommending him as a teacher is presented as a fairly unremarkable detail of the historical context of the dialogue. Such a characterization would not be as coherent were this not a rather well-known piece of information. It could, perhaps, be regarded as evidence in favor of the claim that Plato's early views on musical education at the very least owed something to Damon. Given that, it might be helpful to lay out what we know about Damon's own views – this will allow us to better understand Plato's views and will also help us recognize the points of departure, since Plato rarely takes over the views of his predecessors without modifying and extending them in some way to fit within his own system.

Damon was apparently a pupil of Prodicus, the Sophist (who is also mentioned elsewhere in the Platonic corpus), a teacher of Socrates and, famously, an adviser to Pericles. We unfortunately do not have much evidence besides one fragment from Damon's *Areopagatica* that was supposedly preserved in the second book of Aristides Quintilianus' *De Musica*. The *Areopagatica* was an oration that sought to show that the guardianship of good order ought to be the responsibility of the Areopagus and, further, that music was the best medium for the council to use if they wished to influence the souls of humans and the character of the city. The extant fragment gives

us some more detail on how music is able to have this effect:

ὅτι γὰρ δι' ὁμοιότητος οἱ φθόγγοι συνεχοῦς μελωιδίας πλάττουσιν τε οὐκ ὄν ἦθος ἔν τε παισὶ καὶ τοῖς ἤδη προβεβηκόσι καὶ ἐνδομυχοῦν ἐξάγουσιν, ἐδήλουν καὶ οἱ περὶ Δάμωνα· ἐν γοῦν ταῖς ὑπ' αὐτοῦ παραδεδομέναις ἁρμονίαις τῶν φερομένων φθόγγων ὅτε μὲν τοὺς θήλεις ὅτε δὲ τοὺς ἄρρενας ἔστιν εὐρεῖν ἥτοι πλεονάζοντας ἢ ἐπ' ἔλαττον ἢ οὐδ' ὅλως παρειλημμένους, δῆλον ὡς κατὰ τὸ ἦθος ψυχῆς ἐκάστης καὶ ἁρμονίας χρησιμευούσης.

For the tones (φθόγγοι) resemble, as I said, their dominant intervals and limiting notes, and these resemble the movements and passions of the soul. That the notes even of a continuous melody form by similarity a character that did not exist previously both in the young and in those already advanced in years and develop one that is latent was made clear by Damon and his school as well. In the *harmoniai* handed down by him, at any rate, one will find that of the notes employed, the female and the male at one time or another either dominate or are used more sparingly or not at all — clearly because a *harmonia* too is beneficial according to the character of each kind of soul. DK B7

The context within which this fragment is found is a broader discussion (by Aristides) of the character of individual notes. Aristides takes it as uncontroversial that some notes are male and others female and yet others neutral or mixed and seeks to establish, with the aid of Damon, that intervals and harmonies *also* possess characters. This has great pedagogical potential since we can apply harmonies with certain characters to souls much in the manner that a doctor would apply medicine to the body — the soul can be affected either by similarity (homeopathy) or opposition (allopathy), and the character of the subject's soul will determine whether it is to be moved by similarity or

by opposition.

There are two salient points in the Aristidean description of Damon's views, as Lord (1978) has observed. First, Damon thought that musical *harmonia* was to be used on the souls of both the young and the old. Second, the character can be moved by similarity *or by opposition*. On Damon's purported view, one could use, for instance, a soft *harmonia* on a harsh soul in order to make the soul less harsh. Aristides considers that a therapeutic character education functions by means of opposition (*kat' enantiotēta*) and an ophelletic education, on the other hand, functions by means of similarity (*kath' homoiotēta, di' homoiotētos*). Musical education for Plato, however, seems to be ophelletic – children learn to be brave by listening to courageous melodies, for instance.

The other fragments of Damon tell us that he believed that song and dance necessarily arose when the soul was moved in some way, and that this happened when a beautiful melody created a similarly beautiful soul and the reverse another kind (B6). We also learn that, through similarity, music can create a character that did not exist in the young and bring out the latent character of those more advanced in years (B7), and that it is important for a boy to reveal not only courage (*andreia*) but also moderation (*sophrosynē*) and justice (*dikaiosynē*) when playing the lyre (B4). We find very similar ideas in Book III of Plato's *Republic*.

I agree with Anderson (1955) that Plato probably saw Damon as an ally, albeit

a dangerous one. He was dangerous because he was not like the man described in the *Laches* whose very life embodies the finest *harmonia* and because Damon's views on musical *innovation* did not fit well with Plato's educational program — after all, Plato believed that musical styles never changed without modifying the most important political laws (*Resp.* 424b). One could assume that Plato would not advocate musical *neoterismos* because it would threaten the stability of his ideal city.

The *harmoniai* in Book III represent particular types of behavior by means of musical constructions. Employing the same standards used to select the appropriate themes to be treated in poetic *mythoi*, Socrates begins his analysis by detailing the kinds of behavior that will not be appropriate for future guardians — this includes indulging in dirges and laments as well as in drunkenness, softness and laziness (398a ff.). Since education is to be opheletic rather than therapeutic, any modes that do not represent positive ethical qualities, such as the Lydian, Mixo-Lydian, and Ionian modes, are to be banned from the *kallipolis*<sup>80</sup>.

Socrates attempts to identify the proper ethical traits that should be expressed by the *harmoniai*<sup>81</sup> allowed in the *kallipolis* for the purpose of stimulating the young

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<sup>80</sup> For a discussion of Plato's use of musical modes, see Barker (1989, pp. 137-140).

<sup>81</sup> "*Harmonia*" here translates "mode". Mode can best be described as "essentially a question of the internal relationships of notes within a scale, especially of the predominance of one of them over the others as a tonic, its predominance being established in any or all of a number of ways: e.g. frequent recurrence, its appearance in a prominent position as the first note or the last, the delaying of its expected occurrence by some kind of embellishment. [It is] the epitome of stylized song, of song stylized in a particular



citizens to imitate them: this form of repeated *mimēsis*, as Socrates emphasizes, will help them to internalize these dispositions in their souls because of the extra-rational (or, perhaps, pre-rational) power that music exerts, particularly on young and impressionable individuals. We were told, at the beginning of Book III, that young people are particularly susceptible to being molded by music:

Οὐκοῦν οἶσθ' ὅτι ἀρχὴ παντὸς ἔργου μέγιστον, ἄλλως τε δὴ καὶ νέῳ καὶ ἀπαλῷ ὁτρωῦν; μάλιστα γὰρ δὴ τότε πλάττεται, καὶ ἐνδύεται τύπος ὃν ἂν τις βούληται ἐνσημῆνασθαι ἐκάστῳ.

Now, you know, don't you, that the beginning of any job is the most important part, especially when we are dealing with anything young and tender? For that is when it is especially malleable and best takes on whatever pattern one wishes to impress on it. *Resp.*, 377a11-b4

An immediate question to ask ourselves is what the locus of this imprinting happens to be and obvious answer is: the soul. As Woerther (2008) has emphasized, Plato rarely uses the Damonian (and, later, Aristotelian) term “*ēthos*” in connection with musical education; this is indicative of his concern with the direct effects of music on the soul—recall that already in the *Protagoras* teachers were supposed to instill certain *harmoniai* in the souls (*psychai*) of their students.

Socrates calls upon Damon (400b) to make distinctions among different kinds of rhythms because this is supposedly a ‘technical’ task which is somewhat beyond his

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district or people or occupation; and it draws its character partly from associations contracted in its native home, reinforced perhaps by the sanctions of mythology”. Winnington-Ingram (1936, p. 2).

expertise. Damon, unlike Socrates and Glaucon, was an expert who was capable of identifying the correspondences between specific ethical dispositions (such as servility, violence, madness, as well as their opposites) and the rhythms and *harmoniai* that could adequately represent them in musical contexts. Following Damon, Socrates argues that choosing appropriate rhythms and harmonies will be of the utmost importance in the *kallipolis* since these can corrupt or enrich the soul of one who hears them. The claim seems to be that good individuals possess certain *harmoniai* and *rhythmoi* in their actions which can then be imitated in music and transmitted into the souls of malleable young people. Having stated that a given *harmonia* and *rhythmos* must match a style of speaking and a good and fine character (400d), Socrates goes on to provide arguments in support of the necessity of a proper musical education:

Ἄρ' οὖν, ἣν δ' ἐγώ, ὦ Γλαύκων, τούτων ἔνεκα κυριωτάτη ἐν μουσικῇ τροφή, ὅτι μάλιστα καταδύεται εἰς τὸ ἐντὸς τῆς ψυχῆς ὁ τέ ρυθμὸς καὶ ἁρμονία, καὶ ἐρρωμενέστατα ἅπτεται αὐτῆς φέροντα τὴν εὐσχημοσύνην, καὶ ποιεῖ εὐσχήμονα, ἐάν τις ὀρθῶς τραφεῖ, εἰ δὲ μή, τοῦναντίον; καὶ ὅτι αὖ τῶν παραλειπομένων καὶ μὴ καλῶς δημιουργηθέντων ἢ μὴ καλῶς φύντων ὀξύτατ' ἂν αἰσθάνοιτο ὁ ἐκεῖ τραφεὶς ὡς ἔδει, καὶ ὀρθῶς δὴ δυσχεραίνων τὰ μὲν καλὰ ἐπαινοῖ καὶ χαίρων καὶ καταδεχόμενος εἰς τὴν ψυχὴν τρέφοιτ' ἂν ἀπ' αὐτῶν καὶ γίγνοιτο καλὸς τε καὶ ἀγαθός, τὰ δ' αἰσχροὶ ψέγοι τ' ἂν ὀρθῶς καὶ μισοῖ ἔτι νέος ὢν, πρὶν λόγον δυνατὸς εἶναι λαβεῖν, ἐλθόντος δὲ τοῦ λόγου ἀσπάζοιτ' ἂν αὐτὸν γνωρίζων δι' οἰκειότητα μάλιστα ὁ οὕτω τραφεὶς;

First, because rhythm and *harmonia* permeate the innermost element of the soul, affect it more powerfully than anything else, and bring it grace (*euschēmosunē*), such education makes one graceful if one is properly trained, and the opposite if one is not. Second, because anyone who has

been properly trained will quickly notice if something has been omitted from a thing, or if that thing has not been well crafted or well grown. And so, since he feels distaste correctly, he will praise fine things, be pleased by them, take them into his soul, and, through being nourished by them, become fine and good (*kalos te kagathos*). *Resp.* 401d — 402a

There are a few remarkable points in this passage and the ones quoted above. First, as mentioned earlier, *harmonia* permeates the human soul and molds it in a certain way. Second, it is clearly stated that *harmonia* is capable of *imitating* certain human virtues. Socrates explicitly states that he would like only those *harmoniai* which imitate the tones of moderate and courageous people:

Οὐκ οἶδα, ἔφην ἐγώ, τὰς ἁρμονίας, ἀλλὰ κατάλειπε ἐκείνην τὴν ἁρμονίαν, ἢ ἔν τε πολεμικῇ πράξει ὄντος ἀνδρείου καὶ ἐν πάσῃ βιαίῳ ἐργασίᾳ πρεπόντως ἂν μιμήσαιτο φθόγγους τε καὶ προσφῳδίας, καὶ ἀποτυχόντος ἢ εἰς τραύματα ἢ εἰς θανάτους ἰόντος ἢ εἰς τινα ἄλλην συμφορὰν πεσόντος, ἐν πᾶσι τούτοις παρατεταγμένως καὶ καρτερούντως ἀμυνομένου τὴν τύχην· καὶ ἄλλην αὖ ἐν εἰρηνικῇ τε καὶ μὴ βιαίῳ ἄλλ' ἐν ἐκουσίᾳ πράξει ὄντος, ἢ τινά τι πείθοντός τε καὶ δεομένου, ἢ εὐχῇ θεὸν ἢ διδαχῇ καὶ νουθετήσῃ ἀνθρώπον, ἢ τούναντίον ἄλλῳ δεομένῳ ἢ διδάσκοντι ἢ μεταπείθοντι ἑαυτὸν ἐπέχοντα, καὶ ἐκ τούτων πράξαντα κατὰ νοῦν, καὶ μὴ ὑπερηφάνως ἔχοντα, ἀλλὰ σωφρόνως τε καὶ μετρίως ἐν πᾶσι τούτοις πράττοντά τε καὶ τὰ ἀποβαίνοντα ἀγαπῶντα. ταύτας δύο ἁρμονίας, βίαιον, ἐκούσιον, δυστυχούντων, εὐτυχούντων, σωφρόνων, ἀνδρείων [ἁρμονίας] αἵτινες φθόγγους μιμήσονται κάλλιστα, ταύτας λείπε.

I do not know the *harmoniai*, so just leave me that *harmonia* that would appropriately imitate the vocal sounds and tones (*pthoggoi te kai prosodias*) of a courageous person engaged in battle or in other work that he is forced to do, and who —even when he fails and faces wounds or death or some other misfortune — always grapples with what chances to occur, in a disciplined and resolute way. And also leave me another *harmonia* for when he is engaged in peaceful enterprises, or in those he is not forced to do but

does willingly; or for when he is trying to persuade someone of something, or entreating a god through prayer, or a human being through instruction and advice; or for when he is doing the opposite—patiently listening to someone else, who is entreating or instructing him, or trying to change his mind through persuasion. Leave me the *harmonia* that will imitate him, when he does not behave arrogantly when these things turn out as he intends; but, on the contrary, is temperate and moderate in all these enterprises, and satisfied with their outcomes. Leave me these two *harmoniai*, then—the forced and the willing—that will best imitate the voices of temperate and courageous men in good fortune and in bad. *Resp.* 399a5–c4, tr. Reeve, emphases mine

In this passage, Socrates' choice of particular *harmoniai* is thus explicitly connected with the concept of Platonic *mimēsis*. The basic idea is that musical modes can imitate the character of a virtuous individual; these modes derive their value from the fact that they imitate the right kind of behavior. However, it doesn't end there — these modes can then be used in order to shape malleable souls into having the right kind of structure.

Else (1958) has shown that there are at least three distinct uses of “*mimēsis*” or “*mimēisthai*” in early Greek philosophy — 1) direct representation of looks, actions, or utterances of animals or humans through dramatic enactment in song, dance, and speech (Homer, Aeschylus, Pindar); 2) a mimicking or imitation of the actions of one person by another in an ethical rather than dramatic way (Theognis); 3) replication in the form of an image or effigy in material form (Aeschylus, Pindar). There are several examples in the 5<sup>th</sup> century tragedians of the second kind of *mimēsis* — a wife imitates

the behavior of her husband (*Electra*, 1037), the fairest renown for children is to imitate the manner (*tropos*) of their righteous father (*Helen*, 940–1) etc.

Now, in Book III of the *Republic*, Plato seems to be dealing with at least two kinds of *mimēsis*. The first is the imitation in poetry of the appearance and actions of individuals and the second is the musical representation by imitation of the states of the soul; the passages quoted above show his awareness of both. My primary concern here is the second kind of *mimēsis*, which can perhaps be traced back to Damon. It is by virtue of resemblance or similarity (*homoiotēs*) that music is able to imitate certain human qualities, such as courage and moderation.

According to Plato's account, a person's sounds (*phthoggoi*) and vocal modulations (*prosōdiai*) in respect to a certain practical activity become the object of a musical *mimēsis* which consists of *harmonia*, *rhythmos*, and *logos*. The musically mimetic elements of *harmonia*, *rhythmos*, and *logos* are then absorbed by soul, and more particularly and when they are heard, they stimulate the virtues that are conveyed by the imitative *harmonia*, *rhythmos*, and *logos* in question. We can thus see the didactic potential of *harmonia*. As Socrates tells Adeimantus, *mimēseis* practiced from childhood or youth become part of *ethē* and settle down into habits of gesture, voice, and — perhaps most importantly — thought (*dianoia*). A man who is practiced these *harmoniai* is, perhaps, the virtuous man of the *Laches* who demonstrates *harmonia* not on a lyre but in his very life. Repeatedly listening to *harmoniai* that imitate brave and

moderate characters and trying to acquire these characteristics by assimilating one's soul to the heard *harmoniai* would both presumably play a crucial role in the acquisition of virtues.

Plato seems to think, further, that it is the nature of each soul that defines both the nature of the movements of the individual, and the nature of those *harmoniai* with which each soul will finally feel affinity (Barker 1984, pp. 169; cf. *Resp.* 396d). Once the soul has been properly cultivated will be naturally drawn to things that are good and beautiful because like calls to like:

... καὶ ὀρθῶς δὴ δυσχεραίνων τὰ μὲν καλὰ ἐπαινοῖ καὶ χαίρων καταδεχόμενος εἰς τὴν ψυχὴν τρέφοιτ' ἂν ἀπ' αὐτῶν καὶ γίγνοιτο καλός τε καὶ ἀγαθός, τὰ δ' αἰσχροὶ ψέγοι τ' ἂν ὀρθῶς καὶ μισοῖ ἔτι νέος ὢν, πρὶν λόγον δυνατόν εἶναι λαβεῖν, ἐλθόντος δὲ τοῦ λόγου ἀσπάζοιτ' ἂν αὐτὸν γνωρίζων δι' οἰκειότητα μάλιστα ὁ οὕτω τραφεῖς;

... And so, since he feels distaste correctly, he will praise fine things, be pleased by them, take them into his soul, and, through being nourished by them, become fine and good. What is ugly or shameful, on the other hand, he will correctly condemn and hate while he is still young, before he is able to grasp the reason. And, because he has been so trained, he will welcome the reason when it comes and recognize it easily because of its kinship with himself. 401e5 — 402a4, tr. Reeve

Since the *harmoniai* are capable of affecting souls in such a powerful way, it is essential that only certain kinds of *harmoniai* be allowed into the ideal city. Once the lamenting *harmoniai* (mixo-Lydian, syntono Lydian) and the soft *harmoniai* (Ionian) are eliminated, we are left with only two: the Dorian and the Phrygian. The others

have to be eliminated from the education of young guardians because they cause drunkenness, idleness, and softness. The idea is that only certain kinds of attitudes and actions ought to be represented in music and thus manifested in individuals: the first, the Dorian, involves the actions and words of a person who, when at war or in other painful circumstances, faces these situations bravely and with self-control; the second, the Phrygian, will comprehend the actions of a person who, in peaceful times, is capable both of entertaining significant and pleasant relationships with other citizens and of maintaining a well-balanced relationship with himself, being calm and self-controlled. The Dorian *harmonia* will give musical shape to the virtue of courage (*andreia*) and the Phrygian *harmonia* to moderation (*sophrosynē*).

While the account sketched above gives us a basic idea about the effects of *harmoniai* on the soul, there are still a few lingering questions. We know *that* audible *harmonia* has this power but we do not know *why* it has this power nor do we know the ways in which it can move and mold the human *psychē*. We could also ask why certain characters might feel affiliated with particular types of *harmoniai*. Finally, we might wonder how entities as different as souls, bodily movements and musical melodies can share the same basic nature. While these questions are not all answered in the *Republic*, we can find (at least partial) answers in the *Timaeus*; I will, then, return to them in next chapter.

In the *Gorgias* we learned that the most wretched state of the soul was injustice just as the most wretched state of the body was disease. Plato is committed to a similar view in *Republic* III, but he goes beyond this to argue for the importance of a body that is *commensurate* to the soul. Proper training in *mousikē* will have left the future guardians aware of virtues to be embraced and vices to be avoided (402c) but the most beautiful thing of all is a person whose fine soul is housed in an equally fine body:

Οὐκοῦν, ἣν δ' ἐγώ, ὅτου ἂν συμπίπτῃ ἔν τε τῇ ψυχῇ καλὰ ἦθι ἐνόντα καὶ ἐν τῷ εἶδει ὁμολογοῦντα ἐκείνοις καὶ συμφωνοῦντα, τοῦ αὐτοῦ μετέχοντα τύπου, τοῦτ' ἂν εἴη κάλλιστον θέαμα τῷ δυναμένῳ θεᾶσθαι; /Πολύ γε./ Καὶ μὴν τό γε κάλλιστον ἐρασμιώτατον;/ Πῶς δ' οὐ; /Τῶν δὴ ὅτι μάλιστα τοιούτων ἀνθρώπων ὃ γε μουσικὸς ἐρώη ἄν· εἰ δὲ ἀσύμφωνος εἴη, οὐκ ἂν ἐρώη.

SOCRATES: Then, if the fine habits in someone's soul and those in his physical form agree (*homologounta*) and are in concord (*symphōnounta*) with one another, so that both share the same pattern, wouldn't that be the most beautiful sight for anyone capable of seeing it?/GLAUCON: By far./S: And surely the most beautiful is also the most loveable, isn't it?/G: Of course./S: A really musical person, then, would passionately love people who are most like that. But a disharmonious (*asymphōnos*) person, he would not passionately love. 402d, tr. Reeve

However, it is quickly clarified that even this 'passion' is not something unchecked — passion is felt only for entities that are orderly (*kosmios*) and beautiful (*kalon*) (403a 6). The guardians are to follow a strict regimen, avoiding excessive alcohol and rich foods(404 c-e); in justifying this regimented life, Socrates compares a dissolute regimen to dissolute music while also likening a moderate soul to a healthy body:



Ὅλην γὰρ οἶμαι τὴν τοιαύτην σίτησιν καὶ δίαιταν τῇ μελοποιίᾳ τε καὶ ᾠδῇ τῇ ἐν τῷ παναρμονίῳ καὶ ἐν πᾶσι ῥυθμοῖς πεποιημένη ἀπεικάζοντες ὀρθῶς ἂν ἀπεικάζοιμεν. [...] Οὐκοῦν ἐκεῖ μὲν ἀκολασίαν ἡ ποικιλία ἐνέτικτεν, ἐνταῦθα δὲ νόσον, ἡ δὲ ἀπλότης κατὰ μὲν μουσικὴν ἐν ψυχαῖς σωφροσύνην, κατὰ δὲ γυμναστικὴν ἐν σώμασιν ὑγίειαν;

And the reason for that, I take it, is that we would be right to compare this sort of diet, and this lifestyle, to the polyharmonic (*panharmoniō*) songs and lyric odes that make use of every sort of rhythm. [...] There complexity engendered intemperance, didn't it, and here it engenders illness; whereas simplicity in musical training engenders temperance in the soul, and in physical training health in the body? 404e, tr. Reeve

While the guardians must care for their body, this care must not be excessive. In the first place, they will not attempt to artificially prolong their lives if their bodies are diseased (410a). Furthermore, the guardians will not forget that all physical regimen is chiefly for the care of the soul (410c). Excessive care of the body is detrimental to the well-being of the soul and results in a savage and brutish individual (411a ff.). The relationship between health and *harmonia* and the importance of a soul-body *harmonia* are articulated even more clearly later in the *Republic*.

## II. The tripartite city and the tripartite soul<sup>82</sup>

Thus far we have seen how *harmoniai* — understood as ‘modes’ — play an indispensable role in the proper rearing of future guardians; we also saw the need for a *harmonia*

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<sup>82</sup> See Brisson (2005) on ‘functional tri-partition’ and its pre-Platonic Indo-European origins. He draws also on the work of Dumézil (1968) and Yoshida (1964).

between the soul and the body, reinforcing ideas that are also present in the *Symposium* and the *Gorgias*. In Book IV, however, Plato uses yet another aspect of *harmonia*.

## II.1 The virtuous city

Let us first remind ourselves of the central question of the *Republic*: what is justice? As mentioned above, Socrates' response is to first examine justice 'writ large' in the *polis* and then turn to the analogous justice in the individual soul. Socrates' *kallipolis* will "completely good," which he parses as "wise, courageous, moderate, and just" (427e 10). The *kallipolis* is made up of three classes of people – the 'wage-earners' or laborers and craftsmen, the auxiliary guardians who protect the city, and ruler-guardians or "complete guardians" (414a-b, 428d 7) who govern the city. Wisdom belongs to the ruler-guardians and courage to the auxiliary-guardians; this leaves us with moderation and, most importantly, justice.

Unlike the other two virtues, neither of these belongs to a particular part of the city; rather, they are spread out throughout the three classes. Moderation resembles a kind of *harmonia*:

καὶ ὥς γε ἐντεῦθεν ἰδεῖν, συμφωνία τινὶ καὶ ἁρμονία προσέοικεν μᾶλλον ἢ τὰ πρότερον. / Πῶς; / Κόσμος πού τις, ἣν δ' ἐγώ, ἡ σωφροσύνη ἐστὶν καὶ ἡδονῶν τινῶν καὶ ἐπιθυμιῶν ἐγκράτεια, ὥς φασὶ κρείττω δὴ αὐτοῦ ἀποφαίνοντες οὐκ οἶδ' ὅτινα τρόπον, καὶ ἄλλα ἅττα τοιαῦτα ὥσπερ ἵχνη αὐτῆς λέγεται. ἡ γάρ;

Seen from here, [moderation] is more like a kind of concord and *harmonia* than the previous two./ How so?/ Moderation is surely a sort of order, the master of certain kinds of pleasures and appetites. People indicate as much when they use the term “self-mastery” although I do not know how. This and other similar things are like footprints that moderation has left, aren’t they? 430e

Socrates clarifies that this mastery does not involve one part of the city simply dominating the other; rather, the subjects agree to be mastered and the rulers agree to master. The relationship between the rulers and the subjects is not an egalitarian one, but the inequality is not the source of any kind of conflict. Having made this clarification, he explains in more detail what it means for moderation to be “a kind of concord and *harmonia*”:

Ὅρᾳς οὖν, ἦν δ' ἐγώ, ὅτι ἐπιεικῶς ἐμαντεύομεθα ἄρτι ὡς ἁρμονίαν τινὲς ἢ σωφροσύνην ὁμοίωται; / Τί δῆ; / Ὅτι οὐχ ὥσπερ ἡ ἀνδρεία καὶ ἡ σοφία ἐν μέρει τινὲς ἑκατέρωθεν ἐνοῦσα ἢ μὲν σοφίᾳ, ἢ δὲ ἀνδρείᾳ τὴν πόλιν παρέιχετο, οὐχ οὕτω ποιεῖ αὕτη, ἀλλὰ δι' ὅλης ἀτεχνῶς τέταται διὰ πασῶν παρεχομένη συνάδοντας τοὺς τε ἀσθενεστάτους ταύτων καὶ τοὺς ἰσχυροτάτους καὶ τοὺς μέσους, εἰ μὲν βούλει, φρονήσει, εἰ δὲ βούλει, ἰσχύϊ, εἰ δέ, καὶ πλήθει ἢ χρήμασιν ἢ ἄλλῳ ὁτρωοῦν τῶν τοιούτων· ὥστε ὁρθότατ' ἂν φαῖμεν ταύτην τὴν ὁμόνοιαν σωφροσύνην εἶναι, χείρονός τε καὶ ἀμείνονος κατὰ φύσιν συμφωνίαν ὁποῖον δεῖ ἄρχειν καὶ ἐν πόλει καὶ ἐν ἐνὶ ἐκάστῳ.

Do you see then, I said, that we had just now correctly guessed that moderation resembles a kind of *harmonia*?/ How so?/ Because it is unlike courage and wisdom, each of which resides in one part and makes the city either courageous or wise. Moderation does not work in that way but has indeed been extended throughout the whole, making the weakest, the strongest, and all those in between sing the same song together – whether in wisdom, if you like, or in strength or if you prefer in numbers, wealth, or anything else. Thus we would be absolutely right to say that this

unanimity (*homonoia*) is moderation – the concord (*symphōnia*) between the naturally better and the naturally worse, about which of the two should rule in the city-state and in the individual. *Resp.* 431e 7 – 432a 10

The first thing to note is that Plato uses not only “*harmonia*” to explain *sophrosynē* but a range of words that belong to the domain of music as well as politics: *synaidō*, *homonoia*, *dia pasōn*, and *symphōnia*. “*Homonoia*” is relatively uncommon in the Platonic corpus,<sup>83</sup> as Leroux (2004, p. 607) also notes; it is, however, a word found with some frequency in the works of fifth-century Attic orators, and is very close in meaning to “*harmonia*” – it is often translated as “unanimity” but this does not capture all that the word meant by Plato’s time. The primary sense of *homonoia* is something like ‘reconciliation of factions in a single city’ and it acquires this meaning in the fifth and fourth centuries, most notably in the works of Isocrates<sup>84</sup>; it is a description of the *sophrōn* city in which three classes, the ‘stronger, weaker, and those in between’ – presumably a reference to the rational guardians (*phronēsei*, 432a 5), the warrior auxiliaries (*ischui*, 432a 5), and the many (*plēthei*, 432a 7) – are stretched together to sing a single song.

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<sup>83</sup> With the exception of two tokens in the *Symposium* (186e2, 187c4) and five tokens in the spurious *Alcibiades I*.

<sup>84</sup> For more on the early meanings of “*homonoia*” see Romilly (1972).

The use of *teinō* (*tetatai*, 432a 3), especially in conjunction with all the other musical vocabulary, brings to mind the strings of a lyre being stretched together to create one sound. In case the reader has managed to miss the musical metaphor, Plato also uses “*dia pasōn*,” which means “octave”<sup>85</sup> and “*synaidō*,” “to sing together” – while the former was a common musical term, although more so in post-Platonic texts, “*synaidō*” was a somewhat uncommon word<sup>86</sup>. The last musico-political term is *symphōnia*, which, like *homonoia* and *harmonia*, signifies a concord of disparate entities. Thus, *sophrosynē* resembles *harmonia* inasmuch as brings together three discrete and unequal entities in order to produce a common sound. On the basis of this comparison, at least, Plato does not appear to think of *harmonia* as a *product* but rather as an organizing principle.

Having spent some time establishing what *sophrosynē* is, Socrates seems to give short shrift to justice in the city, which is somewhat surprising considering that it is, after all, the goal of the entire inquiry. He describes it as each person doing what is proper to them and not meddling with the others (433–5):

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<sup>85</sup> According to Nicomachus (*Enchiridion* 9), *hoi palaiotatoi* used “*syllaba*,” for the fourth, *di’oxeia* for the fifth, and *harmonia* for the octave and these terms were later abandoned for *dia tessaron* (fourth), *dia pente* (fifth), and *dia pasōn* (octave).

<sup>86</sup> This is, however, Plato’s only use of “*dia pasōn*” and *synaidō* only has three other tokens in the Platonic corpus. We do find “*dia pasōn*” at *Tht.* 197d 8 but we have no reason to believe, given the context, that he is using it in its technical, musical sense. Plato uses “*synaidō*” twice in *Prt* (333a) and once in *Grg.* (461a 2). Cf. also Heraclitus, B10 where *synaidō* is opposed to “*diaidō*”.

Καὶ μὴν ὅτι γε τὸ τὰ αὐτοῦ πράττειν καὶ μὴ πολυπραγμονεῖν δικαιοσύνη ἐστὶ, καὶ τοῦτο ἄλλων τε πολλῶν ἀκηκόαμεν καὶ αὐτοὶ πολλάκις εἰρήκαμεν. .... χρηματιστικοῦ, ἐπικουρικοῦ, φυλακικοῦ γένους οἰκιοπραγία, ἐκάστου τούτων τὸ αὐτοῦ πράττοντος ἐν πόλει, τούναντίον ἐκείνου ... δικαιοσύνη τ' ἂν εἴη καὶ τὴν πόλιν δικαίαν παρέχοι;

And we have heard many people say and have said ourselves that justice is doing one's own and not being meddlesome... When the money making, auxiliary, and guardian *genē* each do their own work in the city, it is justice is it not? 433a1-b 2; 434c 7-9

The first thing, perhaps, to note is that justice is here described as “τὰ αὐτοῦ πράττειν,” (doing one's own)<sup>87</sup> which was one of the proposed definitions of *sophrosynē* in the *Charmides*. Justice also requires one not to meddle – drawing on evidence from fifth century tragedians, comedians, and orators, Adkins (1976, pp. 310ff.) shows that anyone who presumed to possess *aretē*, would use “*polypragmosynē*” to chastise the activities of anyone acting outside of their own sphere of influence.

While ‘meddling’ is clearly something negative, ‘doing one's own’ is a little more complicated. Adkins (1976, pp. 302-306) offers an excellent discussion of the valence of the phrase – it was, he argues, opposed to the traditional political *aretē* of Athens wherein ‘doing one's own’ was opposed to the political virtue of *philia* (in the pseudo-Platonic *Alcibiades I* for instance) and also meant leaving one's city undefended. This is not unsurprising considering that Plato's political program does

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<sup>87</sup> Cf. *Timaeus* 72a. i

not exactly entail a defense of democratic Athens and its socio-political norms. The very notion of ‘doing one’s own’ implies a strict hierarchy that is proper to an aristocracy or an oligarchy where politics is the domain of a very small group of people. All this is to say that we shouldn’t mistake Plato’s definition of justice for a commonplace one since it would probably have seemed bizarre to his contemporaries. We also cannot definitely establish that this is justice until we have also considered justice in the soul, to which he turns next.

## II. 2 Virtue in the soul

Socrates first touches upon virtuous souls in Book III of the *Republic* when he is discussing the educational program for future guardians. As I mentioned in Section I, he seems to think that musical *harmoniai* are able to permeate souls and affect them very powerfully (402a). He also describes the nature of the guardians as being neither savage nor over-cultivated, but rather a harmony of these extremes that then results in virtue:

Δεῖν δέ γε φαμεν τοὺς φύλακας ἀμφοτέρω ἔχειν τοῦτω  
τῷ φύσει./ Δεῖ γάρ. / Οὐκοῦν ἡρμόσθαι δεῖ αὐτὰς πρὸς ἀλλήλας;/  
Πῶς δ' οὔ; / Καὶ τοῦ μὲν ἡρμωσμένου σώφρων τε καὶ ἀνδρεία ἡ  
ψυχὴ;/ Πάνυ γε.

Now we said that our guardians must have both these natures./ Indeed/  
And must not the two be harmonized with one another?/ How could they

not?/ And isn't the soul of the harmonized person moderate and courageous?/ Most certainly. 410e 5 – 411a 2

This is the first time that we are given some notion of what exactly a harmonized soul would harmonize. Recall that already in the *Gorgias* and Simmias' refutation in the *Phaedo*, we were presented with the idea that virtue in the soul is a kind of order or harmony; however, we were not given any notion as to what the relation of this harmony might be. In the passage quoted above, it seems that *harmonia* could obtain between different 'natures' within a person's soul. Book IV, however, gives us an even fuller picture of the relation of psychic *harmonia*.

Plato contends, in *Republic* IV, that the soul is not mereologically simple but that, just as a city is made up of three *genē*, so, too, is the human soul. The argument, however, isn't merely from analogy – or, at least, Plato offers an argument besides that from analogy<sup>88</sup>. The core premise of the argument is what Lorenz (2006, p. 22) calls the 'Principle of Opposites':

Δῆλον ὅτι ταὐτὸν τὰναντία ποιεῖν ἢ πάσχειν κατὰ ταὐτόν γε καὶ πρὸς ταὐτὸν οὐκ ἐθέλησει ἅμα, ὥστε ἂν που εὐρίσκωμεν ἐν αὐτοῖς ταῦτα γιγνόμενα, εἰσόμεθα ὅτι οὐ ταὐτὸν ἦν ἀλλὰ πλείω.

It is clear that the same [thing] will not consent to do and suffer contrary things at the same time in the same part of the soul and in relation to the

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<sup>88</sup> For various discussions of Plato's city-soul analogy see Williams (1973), Brown (1983), Cornford (1912), Lear (1992), Loraux (1987), and Neu (1971). Commentators such as Williams have argued that the analogy is, at its core, fallacious; this may well be the case but it is beyond my scope to discuss it further since I am concerned with what this analogy can tell us about the role of *harmonia* and its role in the microcosm and the macrocosm.



same thing, and thus if we find this happening in the soul, we will know that we are not dealing with one thing but with many. 436b 7 – c 1

The first clause – that the same thing will not undergo and suffer contrary things – is the ‘Principle of Opposites’. Socrates then points out a range of opposing impulses within the soul and uses this to argue for the claim that these impulses and desires are felt in different parts of the soul<sup>89</sup>.

The first, and most obvious, distinction is between reason and appetite. Assent/dissent and impulse/aversion are said to be opposite actions or states. Now, sometimes people are unwilling to eat or drink even at the same time that they have the impulse to do so, i.e. the same people have aversions. By the principle of opposites, they cannot feel the impulse and the aversion in the same part. Thus, on the one hand we have the appetite which drives the person to eat or drink and on the other hand, we have reason whence the aversion for food or drink arises. Reason and appetite are, further, distinct from yet another part — spirit (*thymos*). Socrates illustrates this distinction with the case of Leontius who was consumed with a desire to look at beautiful corpses and filled with anger and disgust by this at the same time; this shows how spirit or anger can “make war” with appetite. Since this is the case, again, by the principle of opposites, spirit and appetite must belong to different parts of the soul.

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<sup>89</sup> Plato doesn’t really use the language of parthood here or elsewhere and I will deal with this problem in Section IV.

Spirit is also distinct from reason — Socrates gives us an example from Homer's *Odyssey* when Odysseus instructs his heart to endure in the face of difficulty. This is interpreted as a case of Odysseus' reason rebuking his spirit, which is the irrationally angry part of his soul. Since reason can rebuke spirit, Socrates concludes that the two must be distinct. The soul is, thus, a complex entity composed of three parts, each of which has a distinct way of acting and being affected.

Having established the structure of the soul, Socrates then turns to the question of the good of the soul. Now the soul comprises three parts just as the *kallipolis* is made up of three classes of people – guardians, auxiliaries, and moneymakers. He argues, first, that the soul will be courageous, wise, and moderate in the same ways that the city is (442-443) – courage belongs to the spirited part, wisdom to the rational part, and moderation is spread throughout the soul such that each part recognizes its place and function.

Socrates then turns, finally, to the central question of justice. In the case of the city, justice consists in making the entire city happy; for this to happen, each of the three classes must do what they are best suited to (434a). Justice in the soul, too, will consist in each part doing what it is best suited to. The three parts will not 'meddle' with each other's functioning and they will each do what is proper to them:

Τὸ δέ γε ἀληθές, τοιοῦτόν τι ἦν, ὡς ἔοικεν, ἡ δικαιοσύνη ἄλλ' οὐ περὶ τὴν ἔξω πρᾶξιν τῶν αὐτοῦ, ἀλλὰ περὶ τὴν ἐντός, ὡς ἀληθῶς περὶ ἑαυτὸν καὶ τὰ ἑαυτοῦ, μὴ ἐάσαντα τὰλλότρια πράττειν ἕκαστον ἐν αὐτῷ μηδὲ

πολυπραγμονεῖν πρὸς ἄλληλα τὰ ἐν τῇ ψυχῇ γένη, ἀλλὰ τῷ ὄντι τὰ οἰκεῖα εὖ θέμενον καὶ ἄρξαντα αὐτὸν αὐτοῦ καὶ κοσμήσαντα καὶ φίλον γενόμενον ἑαυτῷ καὶ συναρμόσαντα τρία ὄντα, ὥσπερ ὅρους τρεῖς ἁρμονίας ἀτεχνῶς, νεάτης τε καὶ ὑπάτης καὶ μέσης, καὶ εἰ ἄλλα ἅττα μεταξὺ τυγχάνει ὄντα, πάντα ταῦτα συνδήσαντα καὶ παντάπασιν ἓνα γενόμενον ἐκ πολλῶν, σώφρονα καὶ ἡρμοσμένον...

And in truth, justice is, it seems, something of this sort. Yet it is not concerned with someone's doing his own on the outside. On the contrary, it is concerned with what is inside; with himself, really, and the things that are his own. It means that he does not allow the elements in him each to do the job of some other, or the three sorts of elements in his soul to meddle with one another. Instead, he regulates well what is really his own, rules himself, puts himself in order, becomes his own friend, and harmonizes the three elements together, just as if they were the three defining notes of an octave<sup>90</sup>—lowest, highest, and middle—as well as any others that may be in between. He binds together all of these and, from having been many, becomes entirely one, temperate and harmonious... 443c 8 - e 2

We learn, from this passage, that justice *is* a *harmonia* of the three parts of the soul (and, consequently, the city); it's not merely the case that *harmonia* brings about justice or that justice brings about *harmonia* or some such weaker formulation. We also learn that *harmonia* requires that the relata of the *harmonia* do what is proper to them and stay within their limits, as it were. On this definition, psychic justice it is a state in which the *logistikon*, *epithymetikon*, and *thymoeides* each does its own task and does not meddle with the work of the other; this guarantees, as does *sophrosynē*, that there are no warring factions within the soul and the soul has a beautiful inner order. The

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<sup>90</sup> “*Harmonia*” is used for “octave” here and not “*dia pasōn*,” in contrast to the passage on *sophrosynē*.

consensus arrived in a *sophrōn* soul and city is necessary for the individual and the city to *act* justly.

We must also be wary of conflating *sōphrosynē* and *dikaiosynē* even if they are very closely related. For one, temperance is described as a *kind* of *harmonia* (*harmonia tini*) whereas, in the case of justice, the three parts of the soul are put into a *harmonia* (without any qualifications) and the terminology used is explicitly musical. One might distinguish between temperance and justice by saying that the *harmonia* of moderation is passive since different parts are required to accept their functions while the *harmonia* of justice is active since each part must *perform* a particular function – this is the option taken by, for instance, Grube (1992). I do not disagree with this reading, but hope to supplement it. As we’ve discussed earlier, *harmonia* has many aspects and perhaps the different virtues entail imitating different aspects of it. *Unity* is important in both cases but, with temperance, the focus is on ‘sounding together’ (*symphōnia*) whereas the focus in the case of justice is on the proper ordering of a mereologically complex entity. In both cases, however, there is ‘psychic harmony’ which, in Vlastos’ (1969, p. 2) words refers to a “condition in which the soul is healthy, beautiful, and in the ontologically correct, hierarchic, inner order.”

Following his definition of psychic justice, Socrates moves from identifying justice with a harmonious state to identifying virtue in general with it and then, in an echo of the *Gorgias*, likes virtue to a health and *harmonia*, in the case of the soul, the

body, and the *polis*. I will discuss psychic and political injustice as well as the significance of the musical terminology deployed in Socrates' definition of justice in the next section. Before we turn to this, though, there is one issue that we need to consider : what exactly are the relata of psychic *harmonia*? This is somewhat clear in the case of the *polis* – the three classes – but the status of the 'parts' of the soul is somewhat ambiguous.

We can be certain that the 'psychic harmony' of the *Republic* has nothing to do with the *harmonia* of the soul described by Simmias in the *Phaedo*; psychic *harmonia* in this part of the *Republic* is not a relative *harmonia*, dependent on the body and, whatever the three parts of the soul are, they are not material entities. Plato often doesn't use a separate noun when referring to these parts, preferring, instead, "τὸ λογιστικόν" (the rational), "τό ἐπιθυμητικόν" (the appetitive), and "τὸ θυμοειδές" (the spirited). When he *does* use a separate noun, it is usually "εἶδος," (form; shape; figure; literally, that which is seen) which is as ambiguous as the English 'parts' or 'elements' and, much less frequently, "μέρος" (part) or γέννη (kind, species). Ferrari (2007, p. 119) points out, the three parts of the soul sound like faculties of the soul in Book IV but later, in Books VIII and IX, seem more like drives. However, Guthrie (1971, p. 232) maintains that we cannot "water down this doctrine by speaking loosely of "aspects" of an essentially unitary soul, instead of "parts" of a composite one." In his discussion of this question,

Lorenz (2007, pp. 13–17) responds to another set of interpreters who claim that the kinds or parts of the souls are merely different desires; he argues, instead:

The *Republic's* psychological theory amounts to significantly more than the claim that there are a number of different kinds or forms of human motivation. It also involves the further claims, first, that in order to account for the fact that motivations of these different kinds or forms can (and frequently do) conflict with one another, it is necessary to accept that the embodied human soul is not, as one might think it is, a single undifferentiated thing, but is in fact a composite of a number of distinct and specifiable items...Socrates is not only offering an analysis of human motivation and of human desire. He is also adopting a substantial and problematic position on the nature and constitution of the soul in its embodied state. Lorenz (2007, p. 15)

Lorenz's statement anticipates the motivation for the 'watered down' readings since he specifies that Plato is talking about soul in its *embodied* state. One might contend that Plato's stance in *Republic* IV is, *prima facie*, at odds both with Plato's stance in the *Phaedo* and, more troublingly, with his claims in *Republic* X (611 a ff.) where he claims that something composite could not be eternal whereas the soul *is* eternal. This seems to be the primary reason that some interpreters have taken the claim in Book IV to be only about psychology and not the structure of the soul. However Plato claims only that that the soul *as it really is* is simple – this doesn't rule out the possibility of an embodied soul that is not simple. Similarly, the *Phaedo* is about the disembodied soul and not the embodied one. In the *Timaeus*, too, only the rational part of the soul is immortal whereas the embodied tripartite soul is not.

It is beyond my scope to enter into these arguments in any more detail, but I remain convinced by the arguments of Guthrie (1971) and Lorenz (2007) and suggest that we provisionally accept that the relata of psychic *harmonia*, as characterized in the *Republic*, are three distinct parts and, when these three parts function harmoniously, the soul is a virtuous one or, in the language of contemporary metaethics, *harmonia* functions as a ‘good-making feature’ of the soul.

### III. Vicious constitutions, vicious souls

#### III.1 From justice/injustice to virtue/vice

After having defined justice as a harmonic ordering within the soul wherein each part performs the function proper to it, Socrates identifies injustice as a kind of *stasis* (444b), moving from musical to political terminology and, perhaps, emphasizing the link between the two. We are also told that just actions preserve and help us attain *harmonia* and, further, that wisdom (*sophia*) is the knowledge that allows the just person to institute this inner order whereas injustice is the destruction of the *harmonia* because it is a kind of ignorance (*amathia*). This reinforces earlier Platonic views about the nature of *akrasia*, namely that those do act wrongly do so from ignorance; however, it is unclear why he repeats this here, especially since he does not dwell on it much more at this stage. He also relates injustice to ignorance without providing any justification

for this claim. I will return to this when I discuss Book VII in the next section; I argue that injustice entails the ignorance of the proper harmonic proportion that ought to obtain in the soul of a just individual. Even more importantly, perhaps, Plato relates the virtue of wisdom to the virtue of justice.

He continues to unify the virtues, as it were, when he moves from speaking of justice and injustice to vice and virtue in general:

Οὐκοῦν στάσιν τινὰ αὖ τριῶν ὄντων τούτων δεῖ αὐτὴν εἶναι καὶ πολυπραγμοσύνην καὶ ἀλλοτριοπραγμοσύνην καὶ ἐπανάστασιν μέρους τινὸς τῷ ὅλῳ τῆς ψυχῆς, ἵν' ἄρχῃ ἐν αὐτῇ οὐ προσῆκον, ἀλλὰ τοιούτου ὄντος φύσει οἷου πρέπειν αὐτῷ δουλεύειν, τῷ δ' οὐ δουλεύειν ἀρχικοῦ γένους ὄντι; τοιαῦτ' ἅττα οἶμαι φήσομεν καὶ τὴν τούτων ταραχὴν καὶ πλάνην εἶναι τὴν τε ἀδικίαν καὶ ἀκολασίαν καὶ δειλίαν καὶ ἀμαθίαν καὶ συλλήβδην πᾶσαν κακίαν.

Must it [injustice] then not be some kind of internal *stasis* between the three, meddling and interfering in the tasks of the others and the insurrection (*epanastasis*) of one part of the soul against the whole in order to rule it without it being seemly, its nature being such that it is to be slave to the class (*genos*) that rules? It is this, I think, but also the upheaval and wandering that attaches to it that is injustice, intemperance, cowardice, ignorance and, in short, all kinds of vice. 444b 1-10

Plato gives us the definition of justice after having defined the three other so-called cardinal virtues, and this gives us reason to believe that they are, in some sense at least, distinct and that they, together, constitute virtue and yet, here, we have a clear conflation of vice (and presumably its counterpart, virtue) with injustice (and its counterpart, justice). Injustice entails all kinds of evil and, in particular, cowardice (the



absence of courage) and intemperance (the absence of moderation). The reasons for this conflation, perhaps, have to do with the fact that both justice and virtue are seen as healthy states of the soul and of the city – they are similar insofar as they stem from the soul being in a particular harmonic order. Socrates states, quite unambiguously, that health is to the body what justice is to the soul (444c). Health is then defined as an order wherein the naturally worse elements are mastered by the naturally better elements:

Ἔστι δὲ τὸ μὲν ὑγίειαν ποιεῖν τὰ ἐν τῷ σώματι κατὰ φύσιν καθιστάναι κρατεῖν τε καὶ κρατεῖσθαι ὑπ' ἀλλήλων, τὸ δὲ νόσον παρὰ φύσιν ἄρχειν τε καὶ ἄρχεσθαι ἄλλο ὑπ' ἄλλου.[...] Οὐκοῦν αὖ, ἔφη, τὸ δικαιοσύνην ἐμποιεῖν τὰ ἐν τῇ ψυχῇ κατὰ φύσιν καθιστάναι κρατεῖν τε καὶ κρατεῖσθαι ὑπ' ἀλλήλων, τὸ δὲ ἀδικίαν παρὰ φύσιν ἄρχειν τε καὶ ἄρχεσθαι ἄλλο ὑπ' ἄλλου;

Indeed to produce health is to place the bodily [elements] in their natural relationship of mastering and being mastered one by the other, whereas [to produce] sickness is [to place the elements] in an unnatural relationship of ruling and being ruled one by the other. [...] Doesn't it follow then that to produce justice is to place [the elements] of the soul in the natural relationship of ruling and being ruled. one by the other whereas injustice is [to place the elements] in an unnatural relationship of ruling and being ruled. one by the other. 444d 3-11

We have, here, a clear statement that neither justice nor health consist in a kind of brute egalitarianism – the kind which is attributed often to Alcmaeon, for instance – and with good reason since he describes health as an isonomic state with no one element having mastery over the other. As I discussed in Chapter 1, Vlastos attributes

a similar, isonomic model of health to the Hippocratic ones but, as I also pointed out there, such a reading ignores some important Hippocratic texts, such as *On Regimen* that do, in fact, give us a model for health as a harmonic, i.e. inegalitarian, balance. While the analogy between virtue or virtues to health is unsurprising since this is hardly the first time we see such an analogy in the Platonic corpus, it is worth noting the emphasis on *physis*. The hierarchical harmonic order isn't just the correct or the beautiful one, but it is the *natural* one<sup>91</sup>. Even though the analogy is not unexpected, the fact that Plato seems to *deduce* that virtue is a kind of health from the fact that justice is does seem unexpected:

Ἀρετὴ μὲν ἄρα, ὥς ἔοικεν, ὑγίεια τέ τις ἂν εἴη καὶ κάλλος καὶ εὐεξία  
ψυχῆς, κακία δὲ νόσος τε καὶ αἴσχος καὶ ἀσθένεια. (emphasis mine)

So virtue, it seems to me, is a kind of health and beauty and the good state of the soul; vice would be sickness, ugly and weak. 444a 1-2

He gives no reason for the fact that virtue is a kind of health other than the fact that justice is a kind of health. In this passage as well as the ones quoted above, Plato blurs the distinctions between the virtues, casting doubt on their cardinality, and appears, at least *prima facie*, to assign a central role to justice since the other virtues are defined in terms of it.

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<sup>91</sup> This is a notion that will be fully developed in the *Timaeus*.

Carr (1988, pp. 189 ff.) claims that there is only “partial interdefinition” between the virtues in the *Republic* and they are not reducible to one another. While this may be true, it does seem as though the virtues could be explained in terms of a single principle: *harmonia*. Since health is a kind of *harmonia* and virtue is health of the soul, we have reason, then, to understand virtue as a kind of *harmonia*. Justice, moderation, and courage are all, at different points, described as requiring a harmonic ordering of the parts of the soul; wisdom, too, presumably requires this, since it requires the rule of reason and reason cannot rule if the other parts are not obedient to it. We should also keep in mind the description of wisdom at 428d:

ἔστι τις ἐπιστήμη ἐν τῇ ἄρτι ὑφ' ἡμῶν οἰκισθείσῃ παρά τισι τῶν πολιτῶν,  
ἣ οὐχ ὑπὲρ τῶν ἐν τῇ πόλει τινὸς βουλευέται, ἀλλ' ὑπὲρ αὐτῆς ὅλης,  
ὄντινα τρόπον αὐτὴ τε πρὸς αὐτὴν καὶ πρὸς τὰς ἄλλας πόλεις ἄριστα  
ὁμιλοῖ;

Then does there exist in the city we have just now founded a certain wisdom unique to some of its citizens that does not deliberate about something in the city but about the city as a whole, in what manner it will be in best company with itself and with other cities?

It is quite natural, then, to understand wisdom as entailing the knowledge of *how* to maintain a harmonic order in the city and in the soul. Thus, by the end of Book IV, Plato has argued, in some detail, that the good of the soul and the good of the city require the maintenance of harmonic order, which is understood as a relation between parts that are naturally better and naturally worse wherein the naturally better rule and

the naturally worse are ruled. His choice of *harmonia* is, then, not just a coincidence; there are a few different terms that connote ‘good order’ – *symmetria* and *eukosmia* to name two of the most prominent – but it alone connotes a good order that specifically requires the mastery of some elements and the subordination of others. The significance of this becomes even more apparent when we consider Plato’s accounts of vice and injustice in Book VIII.

### III.2 Degenerate souls and constitutions in *Republic* VIII

Towards the end of Book IV Socrates claims that there is only one kind of virtue (the psychic *harmonia* described earlier, presumably) but there are many different kinds of vice of which he deems four to be significant. He defers the discussion of these five types of souls and constitutions until Book VIII, however. Books V-VII are largely taken up with his discussion of the three waves of paradox, the introduction of the theory of Forms and, finally, the description of the educational program for the guardians, the last of which I will return to in the next section. For now, let us turn to the four primary varieties of vice:

εἰσὶ γὰρ ὅς λέγω, αἵπερ καὶ ὀνόματα ἔχουσιν, ἥ τε ὑπὸ τῶν πολλῶν ἐπαινουμένη, ἡ Κρητικὴ τε καὶ Λακωνικὴ αὕτη· καὶ δευτέρα καὶ δευτέρως ἐπαινουμένη, καλουμένη δ' ὀλιγαρχία, συχνῶν γέμουσα κακῶν πολιτεία· ἥ τε ταύτη διάφορος καὶ ἐφεξῆς γιγνομένη δημοκρατία, καὶ ἡ γενναία δὴ τυραννὶς καὶ πασῶν τούτων διαφέρουσα, τέταρτόν τε καὶ ἔσχατον πόλεως νόσημα.

For the ones of which I speak already have names – the one that is praised by the many, the Cretan or the Laconian one; and the second and second in order of praise is called the oligarchy, a constitution laden with vices; disagreeing with it and next in order is called democracy, and then the noble tyranny which is at odds with all of them, fourth and the most extreme in sickness of the cities. 544c 1-8

We are then told that there are as many types of *eidē* of human types or characters as there are types of constitutions because cities are made out of different kinds of people.<sup>92</sup> Aristotle (*Pol.* V 1316a-b) interprets Plato as offering a historical account (much like his own albeit deficient, as is the case with most of Aristotle's predecessors!) but this seems rather unlikely, especially since Plato himself acknowledges that enumerating all the types of existent constitutions would be an impossible task<sup>93</sup>. The five constitutions and souls are, I contend, best understood as types. The good and just soul described in the earlier books corresponds to an aristocratic constitution where only the best men rule; the *kallipolis* thus is an instance of the aristocratic type. This

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<sup>92</sup> This argument is somewhat problematic because it seems to imply that a virtuous city is mostly made up of virtuous people whereas a vicious one has vicious citizens whereas the argument in Book IV saw human souls and cities as analogous inasmuch as each had three parts and, in both cases, virtue consisted in the harmonic ordering of those parts. Thus a virtuous soul/city is not one that is made up of virtuous people for the most part but one where reason/the guardian class rules with the aid of spirit/auxiliary class and where appetite/the moneymaking class is appropriately subservient. At any rate, not a great deal hinges on this particular argument since in the very next step, Socrates compares cities and souls in the same way as in Book IV – cities and souls of the same kind will have the same kind of internal order (or lack thereof).

<sup>93</sup> An illuminating discussion of the histories of ancient Greek constitutions can be found in Bordes (1982).

ideal state is disturbed when there is any kind of faction – recall that the maintenance of psychic *harmonia* was a necessary condition for the possession of virtue. The moment any one part steps beyond its limits, the soul and the city ceases to be good. This is what happens, in different ways and to different degrees, in each of the degenerate states.

The timocracy, which is how the Laconian constitution is classified, comes about when the spirited part or the auxiliary part becomes too strong (545d – 546b). In this state, the auxiliaries value *gymnastikē* over *mousikē* and chase honors and wealth instead of engaging in philosophical discussions (548 b) – in the ideal state the care of the body matters only insofar as it leads to a healthy and beautiful soul and a timocratic state fails to take this into account. However this is, as Glaucon points out, a mixture of good and bad since it is the second best element that rules and since there is still a strict separation between the functions of the moneymaking class/appetite and the auxiliary class/spirit even though the division between the auxiliaries/spirit and the guardians/reason is blurred. Such a person would be similarly harsh and less ‘musical’ who loves “physical training and hunting” to excess (549a); he would lack the best guide: *logos* mixed with *mousikē* (549b).

While a timocracy still places value on physical prowess and honors, the oligarchy transfers this love of honor to a love of money, becoming much less good than the timocratic state. Timocracy degenerates into oligarchy when the rules in a

timocratic state conflate virtue and money; even though virtue doesn't consist in honor, it is closer to virtue than money is. Indeed, Socrates goes as far as to say that virtue, if set on a balance, would be completely opposed to wealth (550e 5). Money-making, in the ideal state, would be the domain of a particular class alone and the same is true of brute desire in a human soul. The task of this lowest parts is to be obedient to the higher parts. However, in the oligarchic state and soul, this does not obtain and two higher parts are enslaved (553d) in service of the basest element. While the oligarchic state is still a vicious one because it lacks the single mindedness and harmony (ὁμονοητικῆς δὲ καὶ ἡρμოსμένης) of the virtuous state, it is not the worst because, even in an oligarchy, the better appetites master the worse ones (554e 3). The importance of a unified state is emphasized here when the oligarchic person is described as having a twofold (*diploos*) nature (554d 10). While the mixture in an oligarchic type tends more towards the bad than does the mixture in a timocracy, there is still *some* semblance of good.

While it would be difficult to read the ideal city of the *Republic* as anything other than an attack on Athenian democracy, the discussion in Book VIII (556 ff.) offers the most direct attack on a democratic ideal. The democratic state arises out of the sickness that oligarchy eventually results in; this sickness leaves it susceptible to outside influences, such as democracy (556-7). In modern parlance, democracy is a

nasty virus that is caught by a city or soul whose antibodies have been weakened by love of money.

Plato does not, however, merely dismiss democracy – he certainly seems aware of its charm even though this charm is, as he claims, a superficial one. A democratic state is seen as a ‘pleasant’ one where anyone who wants to rule can rule and there is a great deal of complexity because of the multiplicity of constitutions. Since unity is the goal, according to Plato, this talk of multiplicity obviously has a negative valence even though it not presented as such.

Socrates’ description of the democratic state as *kallistē* (most beautiful) can only be read as ironic, especially given the somewhat heavy handed repletion of the superlative *kallistē* (thrice in one sentence); and if there is any doubt in the mind of the reader, he also uses “*kallistos*” to describe the tyrannical state (562a 5). He describes a democracy as a convenient place to look for a constitution (557d 3), which is the epitome of backhanded praise since it’s a convenient ‘marketplace’ of constitutions because it lacks a unified and stable constitution. Democracy also seems to involve a kind of anarchic libertarianism since everyone can do as they please, free of any kind of enforced rule or any kind of check whatsoever. It is a pleasant (*hēdus*) state with much forbearance and a complete absence of pettiness; again, this seems like a positive description until it is fleshed out as involving criminals strolling around like heroes



(558b) and anyone, irrespective of his nature or education, being allowed to rule if he claims to wish the majority well (558 c).

The democratic person is similar in every way to the democratic state – all parts have equal say irrespective of their worth and such a person contains multitudes; he might over-indulge his appetite one day but practice politics and allow his spirit to rule another day and then spend yet another day studying what he takes to be philosophy (561 d). There are several “complex and beautiful” characters within this soul just as there are several constitutions contained in a democracy (562e 4).

Importantly, for our purposes, a democratic man is described as being “*isonomikos*”, i.e. committed to *isonomia* (a strict 1:1 ratio). The crux of the problem is expressed briefly at 558 d: “...ἡδεῖα πολιτεία καὶ ἄναρχος καὶ ποικίλη, ἰσότητά τινα ὁμοίως ἴσοις τε καὶ ἀνίσοις διανέμουσα.” (...[democracy is] a pleasant and complex and ruler-less constitution **with equality being distributed to equal and unequals alike.**”). Plato takes issue with a model of equality that was long defended by apologists for democracy as being the ideal kind of distribution and by some medical writers as being the ideal state of the body. As I mentioned in the earlier section, Plato’s choice of “*harmonia*” is not coincidental; it is not just a stand-in for “order,” generally speaking, but it refers to a very particular kind of order. I believe that we can turn to a few

fragments of Archytas<sup>94</sup> in order to fully understand Plato's argument against an egalitarian democracy<sup>95</sup>. Before I turn to these passages, however, I should note that scholars have invoked Isocrates' earlier distinction between the two kinds of equality (*Areopagiticus* 21) as well as Aristotle's later distinction between different kinds of justice in the *Politics* (1301a-b) in order to better explain Plato's arguments against democracy. It is, of course, undeniable that he is somewhat in agreement with Isocrates (*Areopagiticus* 21-2):

Μέγιστον δ' αὐτοῖς συνεβάλετο πρὸς τὸ καλῶς οἰκεῖν τὴν πόλιν, ὅτι δυοῖν ἰσοτήτοιν νομιζομέναιν εἶναι, καὶ τῆς μὲν ταύτων ἅπασιν ἀπονεμούσης τῆς δὲ τὸ προσῆκον ἐκάστοις, οὐκ ἡγνόουν τὴν χρησιμωτέραν, ἀλλὰ τὴν μὲν τῶν αὐτῶν ἀξιοῦσαν τοὺς χρηστοὺς καὶ τοὺς πονηροὺς ἀπεδοκίμαζον ὥς οὐ δικαίαν οὔσαν, τὴν δὲ κατὰ τὴν ἀξίαν ἕκαστον τιμῶσαν καὶ κολάζουσιν προηροῦντο, καὶ διὰ ταύτης ὥκουν τὴν πόλιν, οὐκ ἐξ ἀπάντων τὰς ἀρχὰς κληροῦντες, ἀλλὰ τοὺς βελτίστους καὶ τοὺς ἰκανωτάτους ἐφ' ἕκαστον τῶν ἔργων προκρίνοντες. τοιούτους γὰρ ἤλπιζον ἔσεσθαι καὶ τοὺς ἄλλους, οἳ περ ἂν ὧσιν οἱ τῶν πραγμάτων ἐπιστατοῦντες.

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<sup>94</sup> Morrison (1958) also draws attention to Archytas and the harmonic mean; however, he does not consider the passages quoted in Stobaeus in connection with this. Harvey (1965), on the other hand, does mention the Stobaeus passages but argues that they are spurious – on the question of authenticity, one might turn to Huffman (200\_) who has shown that the evidence is balanced both for and against authenticity. Even if these fragments were not written by Archytas, Delatte (1932) has argued, through careful analysis that they were written in the Doric dialect of the fifth century so it is highly unlikely, at any rate, that these fragments are post-Platonic forgeries. Harvey remains unconvinced that Plato praises harmonic equality in the *Republic* and offers a range of arguments against Morrison. I follow Delatte (1932) and Ausland (2006) in taking the fragments to be genuine – or, at least not post-Platonic forgeries – and in taking Plato to be using the theory of harmonic means in the *Republic*.

<sup>95</sup> Barker (2000) tells us that Archytas was really the first Greek harmonic scientist. He was a contemporary of Plato's and is mentioned by him in the *Seventh Letter* as having apparently saved his life. For a detailed biography, see Huffman (2005, pp 3-43).

But what contributed most to their good government of the state was that of the two recognized kinds of equality—that which makes the same award to all alike and that which gives to each man his due—they did not fail to grasp which was the more serviceable; but, rejecting as unjust that which holds that the good and the bad are worthy of the same honours, and preferring rather that which rewards and punishes every man according to his deserts, they governed the city on this principle, not filling the offices by lot from all the citizens, but selecting the best and the ablest for each function of the state; for they believed that the rest of the people would reflect the character of those who were placed in charge of their affairs.

However Plato's distinctions in the *Republic* are yet more complex since he seems to be comparing not two but *three* kinds of structures of distribution – that found in an aristocracy, that found in oligarchies, tyrannies, and timocracies and, third, the one found in democracies. For this reason I believe that a comparison with Archytas might prove fruitful.

The relevant passages are from a work entitled *On Law and Justice* (Περὶ νόμου καὶ δικαιοσύνης) that is attributed to Archytas on the basis of quotations by Stobaeus. I should note that the authenticity of these passages has been doubted, most recently by Huffman, but, as even he acknowledges, the evidence as to the authenticity of these passages is balanced more or less equally; I follow Delatte (1934) in taking these fragments to be authentic. Archytas first draws a comparison between *harmonia* and law:

Νόμος ποτ' ἀνθρώπω ψυχάν τε καὶ βίον ὅπερ ἁρμονία ποτ' ἀκοάν τε καὶ φωνάν· ὃ τε γὰρ νόμος παιδεύει μὲν τὰν ψυχάν, συνίστησι δὲ τὸν

βίον, ὃ τε ἁρμονία ἐπιστάμονα μὲν ποιεῖ τὰν ἀκοάν, ὁμόλογον δὲ τὰν φωνάν.

The law's relation to the soul and way of life of a human being is the same as *harmonia*'s relation to hearing and vocal expression. For, whereas the law educates his soul, it also organizes his way of life; likewise, whereas *harmonia* makes his hearing prudent, it also makes his vocal expression agreeable. Stobaeus 4.1.135

This puts us in mind of Plato's arguments, in Book III of the *Republic* and in the earlier dialogues, about the power of *harmonia*. Archytas then describes a bipartite soul in which virtue is produced by the harmonizing (*synarmogē*) of reason and appetite such that the rational parts rules and the irrational parts is ruled (*Stob.* 4.1.135). The perfect law is one that is compliant with nature:

ἀκόλουθος μὲν ὧν κα εἴη τῷ φύσει, μιμεόμενος τὸ τῆς φύσιος δίκαιον· τοῦτο δὲ ἐστὶν τὸ ἀνάλογον καὶ τὸ ἐπιβάλλον ἑκάστῳ κατὰ τὰν ἑκάστῳ ἀξίαν.

It would, then, be compliant with nature if it were to imitate the justice of nature: this is what is proportionate, i.e. what falls to each in accordance with the worth of each. Stobaeus 4.1.135

Compliance with nature requires a distribution that is in *accordance with the worth of each entity* – we can already begin to see echoes of this sentiment in *Republic* VIII since a democracy is presumably vicious because the distribution is arbitrary and has nothing to do with the natural worth of the *genē* in the city and in the soul. However, Archytas

goes on to use explicitly musical/mathematical terminology in order to better explain his claims:

καὶ τὸ ἀριστοκρατικὸν κατὰ τὴν ὑπεναντίαν μεσότητα· τοῖς μὲν γὰρ μέζουσι μέζοντας τῶς [δὲ] λόγως, τοῖς δὲ μῆουσι μῆοντας διανέμει ἅ ἀναλογία αὐτά· τὸ δὲ δαμοκρατικὸν κατὰ τὴν γεωμετρικάν· ἐν γὰρ ταῦτα τοὶ λόγοι ἴσοι τῶν μεζόνων καὶ μῆόνων μεγεθῶν· τὸ δὲ ὀλιγαρχικὸν καὶ τυραννικὸν κατὰ τὴν ἀριθμητικάν· ἀντιάζει γὰρ αὐτά τῇ ὑπεναντίᾳ· τοῖς γὰρ μῆουσι μέζοντας τῶς λόγως, τοῖς δὲ μέζουσι μῆοντας· ταὶ μὲν ὧν ἰδέαι τᾶς διανομᾶς τοσαῦται, ταὶ δὲ εἰκόνες ἐν ταῖς πολιτείαις καὶ τοῖς οἴκοις θεωρεῖνται· τιμαὶ τε γὰρ καὶ κολάσιες καὶ ἀρχαὶ <ἢ> ἐξ ἴσω τοῖς μέζουσι καὶ μῆουσι διανέμονται, ἢ ἐξ ἀνίσω ἢ τῷ ἀρετῇ ὑπερέχεν ἢ τῷ πλούτῳ ἢ καὶ δυνάμει· τὸ μὲν ὧν ἐξ ἴσω δαμοκρατικόν, τὸ δὲ ἐξ ἀνίσω ἀριστοκρατικόν ἢ ὀλιγαρχικόν.

Aristocracy is founded on the subcontrary mean, for this ratio distributes the greater proportion to the greater and the lesser to the lesser; democracy is established according to the geometric proportion, for in this case the ratios of magnitudes of the greater and lesser are equal; oligarchy and tyranny are founded according to the arithmetic proportion, for these are opposed to the subcontrary mean since a greater part of the ratio [is distributed] to the lesser and a lesser part to the greater. Such are the forms of distribution, and we might observe their images in cities and in households; for honors and punishments and offices are there distributed between the greater and the lesser in the equal measure or in unequal measure to hold with respect to virtue or money or power. The first from equality is democracy, the second, from inequality is aristocracy or oligarchy. Stobaeus 4.1.137

In this passage and elsewhere (Huffman fragments 1 and 2), Archytas explain that there are three different kinds of means: harmonic or subcontrary, geometric, and arithmetic. In contemporary mathematical notation, given the extremes 'a' and 'c', the arithmetic mean is  $a+c/2$ , the geometric mean is  $\sqrt{ac}$  and the harmonic or subcontrary mean is

$2ac/a+c$ . So 4 is the arithmetic mean between 2 and 6, the geometric mean between 2 and 8, and the harmonic mean between 3 and 6. The arithmetic mean represents the differences absolutely in terms of quantity – it exceeds the lesser term by as much as the greater term exceeds it (4–2 is 2 and so is 6–4; thus 4 is the arithmetic mean between 2 and 6); the geometric mean, on the other hand, is *prima facie* more unequal but represents a more fundamental proportional equality since the mean subtracted from the higher extreme is to the extreme what the lower extreme subtracted from the mean is to the mean; in other words  $4(8-4):8::2(4-2):4$ . In the arithmetic mean we have ratios 2:6 and 2:4, which are not proportional, unlike the geometric 4:8 and 2:4 (which can both be reduced to the single ratio 1:2). According to Archytas, the arithmetic mean is found in oligarchies and tyrannies where more is given to less and less to more whereas the geometric mean is to be found in democracies where there is proportional equality.

The harmonic or subcontrary mean is different from both these and offers a third model of equality – this is the model that is followed in an aristocracy, according to Archytas. With the model of 3 and 6 as extremes and 4 as the mean, we can see that the ratio of 6–4 (2) is a third of the higher extreme and 4–3 (1) is a third of the lower extreme. As Ausland (2006, p. 109) puts it, “the arithmetic mean assigned equal amounts, but lesser ratios, and the geometric assigned unequal amounts but equal ratios, the harmonic assigns unequal ratios and unequal amounts, but these amounts are still equal if regarded as parts of the extremes.” The arithmetic mean assigns a

greater ratio to the lower extreme and a lower ratio to the higher extreme; the harmonic mean assigns a greater ratio to the greater extreme and a lower ratio to the lower extreme; the geometric mean assigns equal ratios to each of the extremes. We are now in a position to return to Plato's narrative in Book VIII.

Plato, too, speaks of different kinds of constitutions, but these are five in number: aristocracy, timocracy, oligarchy, democracy, and tyranny; each of these is a structural type with a particular kind of ratio obtaining between the three parts of the city and the soul. Even though Plato doesn't quantify this relationship between the parts of the soul, we could apply Archytas' theory to his typology.

In an aristocracy, the best kind of city, reason/the guardian class dominates with the aid of spirit/the auxiliary class, which gives more power to the greater and less to the lesser, as in a harmonic mean. Timocracies, oligarchies, and tyrannies all resemble arithmetic means in that the lesser parts are given more power and the greater part is given less power – although Plato's more sophisticated psychology allows for sub-distinctions between oligarchies and tyrannies (appetite-dominant) on the one hand and timocracies (spirit-dominant) on the other. Plato and Archytas both seem to agree, however, that the problem with democracy is that there is a strictly egalitarian distribution irrespective of the worth of the entities – equal proportions are given to the greater and to the lesser; both also lay emphasis on the notion that these inequalities

are *natural*, the full significance of which will become more apparent when we turn to the *Timaeus*.

This equation of a harmonic equality with political justice is made even more explicit in the *Laws*<sup>96</sup> :

ἀρίστην ἰσότητα οὐκέτι ῥᾶδιον παντὶ ἰδεῖν. Διὸς γὰρ δὴ κρίσις ἐστί, καὶ τοῖς ἀνθρώποις ἀεὶ σμικρὰ μὲν ἐπαρκεῖ, πᾶν δὲ ὅσον ἂν ἐπαρκέσῃ πόλεσιν ἢ καὶ ἰδιώταις, πάντ' ἀγαθὰ ἀπεργάζεται· τῷ μὲν γὰρ μείζονι πλείω, τῷ δ' ἐλάττονι σμικρότερα νέμει, μέτρια διδοῦσα πρὸς τὴν αὐτῶν φύσιν ἐκατέρω, καὶ δὴ καὶ τιμὰς μείζοσι μὲν πρὸς ἀρετὴν ἀεὶ μείζους, τοῖς δὲ τοῦναντίον ἔχουσιν ἀρετῆς τε καὶ παιδείας τὸ πρέπον ἐκατέροις ἀπονέμει κατὰ λόγον. ἔστιν γὰρ δήπου καὶ τὸ πολιτικὸν ἡμῖν ἀεὶ τοῦτ' αὐτὸ τὸ δίκαιον·[...] ἄλλ' οὐ πρὸς ὀλίγους τυράννους ἢ πρὸς ἓνα ἢ καὶ κράτος δήμου τι, πρὸς δὲ τὸ δίκαιον ἀεὶ, τοῦτο δ' ἐστὶ τὸ νυνδὴ λεχθέν, τὸ κατὰ φύσιν ἴσον ἀνίσοις ἐκάστοτε δοθέν·

For the best kind of equality is difficult for everyone to know. It is the judgment of Zeus and it does not aid men except in small measure, but insofar as it assists individuals or cities, it produces all things good; for it dispenses more to the greater and less to the smaller, giving due measure to each according to nature; and with regard to honors also, by granting the greater to those that are greater in goodness, and the less to those of the opposite character in respect of goodness and education, it assigns in proportion what is fitting to each. Indeed it is precisely this which is political justice to us [...] not the advantage of a few tyrants, or of one, or of some form of democracy, but justice always; and this consists in what we

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<sup>96</sup> This passage has more in common with the Isocrates passage quote above that does the discussion in *Resp.* VIII. Plato does not say anything about harmonic equality in this passage, of course, but it strongly resembles his views from *Resp.* VIII.

I should also note that the geometric mean is mentioned in the *Laws* and that Plato invokes all three of the means in the *Timaeus*. Interestingly, Proclus, in his commentary on the *Timaeus* (III.2), claims that the geometric mean is embodied in Eunomia (good order), the harmonic in Dikē (justice), and the arithmetic in Eirēnē (peace). In Book VIII, the primary concern is with virtue and vice, specifically with respect to justice – so, even though the geometric mean, in particular, does not always have a negative valence in Plato's political thought, it is not, perhaps, conducive to the kind of justice that Plato has in mind here.



have just stated, namely, the natural equality given on each occasion to things unequal. *Leg.* 757b 8–c 6; 757d 2–5 tr. Saunders

Thus the *kallistē* democracy described earlier in *Republic* VIII distributes in a manner that is *prima facie* equal but, at its core, unequal because it doesn't take into account the differences that exist with respect to nature and rearing. A passage from the *Iliad*, quoted by Aristotle in the *Politics* (1267a) captures, to some extent, the sentiment behind Plato's misgivings about democratic equality:

οὐτ' ἔμεγ' Ἀτρεΐδην Ἀγαμέμνονα πεισέμεν οἴω  
οὐτ' ἄλλους Δαναούς, ἐπεὶ οὐκ ἄρα τις χάρις ἦεν  
μάρνασθαι δηῖοισιν ἐπ' ἀνδράσι νωλεμέσ αἰεὶ.  
ἴση μοῖρα μένοντι καὶ εἰ μάλα τις πολεμίζοι·  
ἐν δὲ ἱῇ τιμῇ ἡμὲν κακὸς ἡδὲ καὶ ἐσθλός·

I don't believe that Agamemnon,  
Atreus' son, or any other Argive  
will persuade me, for no thanks are given  
to the man who always fights without rest  
against the enemy. Whether one fights  
or stays behind, the shares are still the same  
Coward and brave man both get equal honor.

A democracy doesn't value or compensate the honorable man any more than the man without honor; an aristocracy, however, does. For Plato, true political justice will involve a harmonic mean – and this is fitting, since justice in the city and justice in the soul were both described as states of harmonic order. Book VIII, then, gives us even more reason to be convinced that Plato did not just choose “*harmonia*” as a

convenient synonym for just any concept of order. Our final step now is to examine Plato's remarks on 'true' harmonics before we turn to the culmination of his theories on *harmonia* in the *Timaeus*.

#### IV. Mathematics and harmonics in *Republic* VII

From the *Protagoras* onwards, Plato is committed to providing a model of knowledge and of measurement that is strictly opposed to Protagorean relativism. In *Republic* VII, he takes especial care to connect measure with truth and accuracy, offering a model for a theoretical rather than empirical standard of measure. Among the shared characteristics of truth and measure is accuracy (*akribeia*) which is set against anything imperfect or unfinished (*ateles*) (504c; 522 ff.). This accuracy is further linked to number and to mathematics for number contains the stability and objectivity that are shared by truth and by proper measure (525a). Nowhere is this more apparent than in his discussion of arithmetic, geometry, astronomy, and harmonics in *Republic* VII. However, before we look at the details of this account, it is necessary to briefly summarize the metaphysical epistemology introduced in Book VI of the *Republic*.

There, Plato famously argues that knowledge is of intelligible entities that are eternal, non-corporeal, and ontologically fundamental; these entities are the Forms (*idea, eidon*). He uses a range of different metaphors and allegories to explain his

metaphysics, and I will focus on the so-called ‘Divided Line’ analogy (510a). We are asked to imagine a line segment that is bisected into two unequal portions; each of these portions is further bisected into two<sup>97</sup>. The lower part of the line segment represents opinions and the world of becoming – the objects in question are sensible objects and their images (*eikones*) : we can only have belief (*pistis*) with respect to the former and imagination (*phantasia*) with respect to the latter; these are not the objects of knowledge and are grasped only by means of our fallible senses. Further, they have reality only insofar as they participate in the more ontologically fundamental entities represented by the upper part of the line, i.e. the Forms. In the higher part of the line segment we have the Forms themselves (culminating in the Form of the Good) at the very top and then other *eidē* in the lower part.

The Forms and the other *eidē* can only be grasped by the intellect (510e). Plato also distinguishes between two epistemic states that we have with respect to the objects represented by the higher portion of the line: *noesis* and *dianoia*, both of which are species of contemplative thought; *dianoia*, however, requires sensible objects as images because it studies its objects by using the hypothetical method whereas *noesis* moves through the Forms directly (510–511). According to Mueller (1992, p. 184), these two

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<sup>97</sup> Plato claims that the line is first to be divided into two unequal parts, one representing opinion and the other knowledge; then, each of the two parts is to be further subdivided, but the subdivisions will be proportionate to the original division of the line. So, if the line was divided in a ratio of, say, 2:1, the sub-divisions will also be in the ratio of 2:1.

kinds of knowing refers to two features of mathematics that are associated especially with geometry : “the use of diagrams in arguments and the derivation of conclusions from initial assumptions (synthesis).” The Divided Line shows that dialectic requires us to ascend from a state of imagination with respect to images to knowledge of the Forms via beliefs about sensibles and (perhaps) conjecture about the other Forms, which many have taken to be geometrical objects. At any rate, the intelligible Forms remain the ultimate objects of knowledge and, among these, the Form of the Good (523b) is undeniably the first principle.

One major puzzle in this analogy is the status of the ‘other’ Forms, and the orthodoxy is to view mathematics as this other class of objects that is distinct from – and obviously inferior to – the Forms proper. However, Cornford (1932), for example, argues that the only entities above the line are Forms and that the divided line represents only an epistemological division – the Forms are, he claims, divided into mathematical Forms and moral Forms. While we may indeed grasp them in different ways – since mathematics can use visible images – we are not speaking of different kinds of entities, he contends. Thesleff (2009, p. 455) remains agnostic, but suggests that the ‘other’ Forms could refer to mathematical objects as well as ‘ordinary’ Forms (the bed from *Republic X*, the shuttle from the *Cratylus*) that are within the grasp of some ordinary people as well whereas only the dialectician can ascend to knowledge of the Forms themselves. For the time being, however, we need not offer a definitive

answer to this rather knotty question – let us simply remind ourselves that the allegory of the cave and the analogy of the divided line both illustrate that knowledge is the result of a dialectical process and, further, that knowledge is only of intelligible objects; even within the realm of intelligibles, there is a hierarchy with the Form of the Good at the very top, the other Forms proper below, and other *eidē*, which may or may not include mathematics, even further below.

We can now turn to Plato's remarks about the education of the guardians. The educational program described in Books II and III of the *Republic* did not distinguish between the future auxiliaries and the future guardians. However, at the age of 20, the best students are separated out and given a further education that requires them to study for a period of ten years all the disciplines that together make up the mathematical sciences, which are preparatory studies for dialectic (536d-e). After being educated in these sciences, the best of those students are to spend 5 years in dialectical questioning and then a few of those are to spend 15 years engaged in military and governmental affairs – the training of guardians, thus, will only be complete when they are 50 years old. Our focus in this section will be the ten years of mathematical education; let us first see what he has to say about each of the sciences – arithmetic, geometry, stereometrics, astronomy, and harmonics – before we turn to the implication of his emphasis on such an education.

In the order of presentation, arithmetic is discussed as the first science capable of raising the soul to the knowledge of Forms. Arithmetic is an art of measurement par excellence. In the *Protagoras*, arithmetic is clearly referred to as a metric, the object of which is *arithmos*, the number and the object of arithmetic is the number, the one and multiples. Arithmetic "leads to the truth," we are told, because it is wholly concerned with number (525b 1).

It is important, however, not to confuse two kinds of arithmetic – there are practical arts that use number but these are not the numbers with which Plato is concerned:

Τοῦτό γε, ὃ νυνδὲ ἐλέγομεν, ὥς σφόδρα ἄνω ποι ἄγει τὴν ψυχὴν καὶ περὶ αὐτῶν τῶν ἀριθμῶν ἀναγκάζει διαλέγεσθαι, οὐδαμῇ ἀποδεχόμενον ἑάν τις αὐτῇ ὁρατὰ ἢ ἀπτὰ σώματα ἔχοντας ἀριθμοὺς προτεινόμενος διαλέγηται.

[Arithmetic] gives the soul a strong lead upward and compels it to discuss the numbers themselves, never permitting anyone to propose for discussion numbers attached to visible or tangible bodies. 525d 5–8

Philosophical arithmetic is founded on the knowledge of numbers whose nature is intelligible (νοητός), that is to say, in the language of the theory of Forms, "numbers in themselves". Numbers, according to Plato, are not, though, the first principles of the intelligible order. However important numbers might be, Plato does not represent intelligible order in the same way as the Pythagoreans supposedly did. The Pythagoreans are reported to have made numbers the very principles of reality.

Moreover, they gave a physical reality to the numbers that lead to puzzles over the very nature of the number. Plato considers that the nature of number is intelligible; yet he does not give numbers an ontological and metaphysical primacy. As the image of the line shows, number is an intermediate reality between sensible objects and Ideas.

Plato endorses a separation between the science of numbers and logistics: this separation is due to the very nature of the objects under consideration (525-526). The objects of science have an intelligible nature, and are in no way corporeal. On the other hand, empirical techniques constitute numerical units based on concrete things and bodies, which necessarily introduces approximation and inaccuracy. The main difference lies in the establishment of the unit of measurement: the arithmetic unit is intelligible, it participates in the One and is characterized by its completion, its identity and its indivisibility. All the numbers obey the determination of the unit of measure which is the One. On the other hand, "empirical" numbers are constituted from imperfect units that are divisible and changeable. It is impossible to grasp any real unity from the senses.

Geometry, which is discussed next, has the same characteristic. As with arithmetic, there are two different types of geometry: one is an "empirical" geometry, oriented towards practice and technique, the other is a real science (*epistēmē*). He finds the former category almost absurd:

Λέγουσι μὲν που μάλα γελοίως τε καὶ ἀναγκαίως· ὥς γὰρ πράττοντές τε καὶ πράξεως ἔνεκα πάντας τοὺς λόγους ποιούμενοι λέγουσιν τετραγωνίζειν τε καὶ παρατείνειν καὶ προστιθέναι καὶ πάντα οὕτω φθεγγόμενοι, τὸ δ' ἔστι που πᾶν τὸ μάθημα γνώσεως ἔνεκα ἐπιτηδευόμενον.

Well, they say completely ridiculous things about it because they are so hard up. I mean, they talk as if they were practical people who make all their arguments for the sake of action. They talk of squaring, applying, adding, and the like; whereas, in fact, the entire subject is practiced for the sake of acquiring knowledge. 527a 6 – b 1

Practitioners of geometry make it an applied and technical discipline. This has two main consequences: first, the finality in question is practical and not theoretical; second, the geometrical object is sensible and corporeal. Consequently, geometrical operations and geometrical measurement are empirical and imperfect. Plato advocates, on the contrary, a theoretical geometry which deals with geometrical objects in general and in an abstract way independently of their sensible manifestations. He therefore views geometry as a science with a theoretical end with a clearly identified object – “knowledge of what always is, not of something that comes to be and passes away” (527b 5).

While one can see how arithmetic and plane and solid geometry can lead one away from sensibles towards intelligibles, it is not immediately obvious how the next two sciences that are discussed – astronomy and harmonics – are able to do the same. In order to understand this, we need to acknowledge that *true* astronomy and



harmonics, for Plato, will not be concerned with actual empirical observation. There is a distinction between the astronomy that has to do with sensibles and the astronomy that is theoretical and contemplative and whose objects are intelligible; true astronomy, like the other sciences, also compels the soul upwards (529 b) and the same will be true of its counterpart, harmonics.

The realm of sensibles does not offer sufficient stability to allow inductive science because it will always be insufficient and imperfect. Consequently, sensibilia are referred to as simple images which are not "true" contrary to the Forms which possess a real essence and are immutable. The methodological approach taken by Plato quite clear: it is a question of imposing on the phenomena a theoretical model which will account for it as far as possible. And if a difference between the two orders existed, the cause would be sensible and material imperfection and not intelligible measure. It is the intelligible measure which applies to phenomena and governs them.

While modern science judges the value of a measurement by its agreement or its effectiveness, Plato, on the other hand, judges the first intelligible measure, and it is up to the sensible to conform to it: there is a completely opposed direction of fit. In the first case, the measure is derived; in the second, it is first and the sensible is derived from it. The sensible measurements are then made in the image of the measurements.

Spatial movement is not, paradoxically, primarily sensible: it is, first, "intelligible" and this, perhaps, is why the intelligible measures of motion are possible

in astronomy. Plato claims to go directly from the intelligible to grasping the essence of time and space and the movement in space is considered itself as an intelligible reality which possesses measures in itself. The work of the philosopher is to be able to grasp these measures in themselves and this what the epistemological conception of astronomy in the *Republic* indicates.

The movement in astronomy is a spatial movement, the sensuous aspect of which is received by the eyes, but the scientific knowledge of movement reveals a second science of movement: *harmonia*. This second science corresponds to a second "species" (*eidos*) of movement defined once again by the sense organ that allows its sensible intuition, i.e. the ears. For Plato, *harmonia* reveals the measures of the "harmonic movement" (ἐναρμόνιος φορά):

Κινδυνεύει, ἔφην, ὥς πρὸς ἀστρονομίαν ὄμματα πέπηγεν, ὥς πρὸς ἐναρμόνιον φορὰν ὥτα παγῆναι, καὶ αὗται ἀλλήλων ἀδελφαί τινες αἱ ἐπιστῆμαι εἶναι, ὥς οἱ τε Πυθαγόρειοί φασι καὶ ἡμεῖς, ὧ Γλαύκων, συγχωροῦμεν

It is probable that as the eyes fasten on astronomical motions, so the ears fasten on harmonic ones, and that these two sciences are somehow akin, as the Pythagoreans say<sup>98</sup>. 530d 6-7

Astronomy and harmonic science have in common the fact that they bear on objects in motion. However, this movement is not erratic and irregular, but one that obeys intelligible measures and proportions. These two sciences are sisters in that they

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<sup>98</sup> This is, presumably, a reference to Fr. 1 of Archytas.

discover the measures and the proportions which govern the intelligible relations between their elements. Plato holds the harmonic practitioners, the ones whom Glaucon describes as “putting ears before understanding,” in as much contempt as he does the empirical mathematicians and astronomers:

ἢ οὐκ οἶσθ' ὅτι καὶ περὶ ἀρμονίας ἕτερον τοιοῦτον ποιοῦσι; τὰς γὰρ ἀκουόμενας αὖ συμφωνίας καὶ φθόγγους ἀλλήλοις ἀναμετροῦντες ἀνήνυτα, ὥσπερ οἱ ἀστρονόμοι, πονοῦσιν. [...] Σὺ μὲν, ἦν δ' ἐγώ, τοὺς χρηστοὺς λέγεις τοὺς ταῖς χορδαῖς πράγματα παρέχοντας καὶ βασανίζοντας, ἐπὶ τῶν κολλόπων στρεβλοῦντας· ἵνα δὲ μὴ μακροτέρα ἢ εἰκῶν γίγνηται πλήκτρῳ τε πληγῶν γιγνομένων καὶ κατηγορίας πέρι καὶ ἑξαρνήσεως καὶ ἀλαζονείας χορδῶν, παύομαι τῆς εἰκόνης καὶ οὐ φημι τούτους λέγειν, ἀλλ' ἐκείνους οὓς ἔφαμεν νυνδὴ περὶ ἀρμονίας ἐρήσεσθαι. ταῦτόν γὰρ ποιοῦσι τοῖς ἐν τῇ ἀστρονομίᾳ· τοὺς γὰρ ἐν ταύταις ταῖς συμφωνίαις ταῖς ἀκουόμεναις ἀριθμοὺς ζητοῦσιν, ἀλλ' οὐκ εἰς προβλήματα ἀνίσχουσιν, ἐπισκοπεῖν τίνες σύμφωνοι ἀριθμοὶ καὶ τίνες οὐ, καὶ διὰ τί ἑκάτεροι.

Or don't you know that people do something similar with *harmonia*, too? They measure audible concordances and sounds against one another, and so labor in vain, just like astronomers.[...] You mean those excellent fellows who vex their strings, torturing them and stretching them on pegs. I won't draw out the analogy by speaking of blows with the pick, or the charges laid against strings that are too responsive or too unresponsive. Instead, I will drop the analogy and say that I do not mean these people, but the ones we just said we were going to question about harmonics. You see, they do the same as the astronomers do. I mean, it is in these audible concordances that they search for numbers, but they do not ascend to problems or investigate which numbers are in concord and which are not, or what the explanation is in each case. 531 a-c

Both the ear and the eye have no value for Plato because theorizing does not consist in establishing empirical laws. The empirical method is once again relegated to

the status of non-science. This method is denounced as inefficient and by definition incomplete and imperfect (*ateles*) (530e 5). The object of the harmonic science is clearly identified: to measure (*anametrountes*) the relations between sounds (531a 2). *Harmonia* establishes the measurements and proportions (expressed by *symphōnia*) between the sounds in a theoretical and contemplative way independently of the sensations. The question of the interval (*diastēma*) is fundamental since it determines the unit of measure from which the relations and proportions between the sounds will be established and the interval has nothing to do with empirical investigations<sup>99</sup>. This also reminds us of the Philolaic relationship between *harmonia* and number – even though Philolaus spoke of musical intervals to illustrate what he meant by *harmonia*, its musical instantiation was clearly just that, i.e. an instantiation of a principle that had little to do with audible consonances.

The difference between the method denounced by Plato and the one he advocates lies in the fact that the former does not relate to the numbers in themselves but to the sensible sounds themselves which are then expressed in numbers. Now, the sounds themselves cannot be the object of a perfect and exact science. Only a study of numbers in itself makes it possible to establish science. The *harmonia* in question, then, is not a *harmonia* of sounds, but a *harmonia* of numbers that audible *harmonia* imitates

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<sup>99</sup> For more on Platonic intervals see Wersinger (2004)

to the best of its ability – but it is a mere imitation. Plato, introduces, therefore, into numbers the very notions of *harmonia*, consonance, and harmonious proportion.

We might, however, wonder about the rationale for his denunciation of empirical sciences and for the insistence on the guardians being educated for a very long period of time in these theoretical sciences. Although he says that none of these sciences will be useless for the auxiliaries (521d), practical application of these sciences is obviously not Plato's primary concern. As Myles Burnyeat (2000) has argued, compellingly and at length, education in these sciences is important because they are somehow constitutive of the Good. The first thing to note is that Plato groups all these as *adelphai technai* as early as the divided line analogy (511 d) – this idea is then reinforced through his treatment of them later in Book VII. As we've seen above, all these sciences are said to orient the soul upwards and throughout Book VII the goals of these are described variously as being as it really is (521d), truth (525b, 526c, 527e), and what is eternal (527b). On the basis of the allegories of the sun and the cave and the analogy of the divided line, this movement upwards culminates in the Form of the Good. That, then, must be the end of the sciences that are to be a part of the guardians' curriculum, since it is unqualified being that always is and that is ontologically fundamental.

Studying these disciplines is important because it prevents us from getting bogged down in the world of sensible entities and, worse, confusing sensibilia with

reality and opinion with knowledge. These mathematical sciences, of which harmonics is one, are, thus, the key to dialectic. With this in place, we are now in a position to turn to the *Timaeus*.

#### APPENDIX: The (in)famous Platonic number in *Republic* VIII

In my discussions above, I did not discuss a passage in which Plato refers to *harmoniai* in the context of political degeneracy. I left this passage out since Plato does not use it in any way to explain his later claims about political degeneracy. However, it does offer us yet another token of *harmonia* even if its meaning is far from clear. The passage is as follows:

ἔστι δὲ θείῳ μὲν γεννητῷ περίοδος ἣν ἀριθμὸς περιλαμβάνει τέλειος, ἀνθρωπείῳ δὲ ἐν ᾧ πρώτῳ αὐξήσεις δυνάμεναί τε καὶ δυναστεύομεναι, τρεῖς ἀποστάσεις, τέτταρας δὲ ὅρους λαβοῦσαι ὁμοιούντων τε καὶ ἀνομοιούντων καὶ αὐξόντων καὶ φθινόντων, πάντα προσήγορα καὶ ῥητὰ πρὸς ἄλληλα ἀπέφηναν· ὧν ἐπίτριτος πυθμὴν πεμπάδι συζυγεῖς δύο ἁρμονίας παρέχεται τρεῖς αὐξηθεῖς, τὴν μὲν ἴσην ἰσάκις, ἑκατὸν τοσαυτάκις, τὴν δὲ ἰσομήκη μὲν τῇ, προμήκη δέ, ἑκατὸν μὲν ἀριθμῶν ἀπὸ διαμέτρων ῥητῶν πεμπάδος, δεομένων ἑνὸς ἐκάστων, ἀρρήτων δὲ δυοῖν, ἑκατὸν δὲ κύβων τριάδος.

Now, for the birth of a divine creature there is a cycle comprehended by a perfect number; while for a human being, it is the first number in which

are found increases involving both roots and powers, comprehending three intervals and four terms, of factors that cause likeness and unlikeness, cause increase and decrease, and make all things mutually agreeable and rational in their relations to one another. Of these factors, the base ones—four in relation to three, together with five—give two *harmoniai* when thrice increased. One is a square, so many times a hundred. The other is of equal length one way, but oblong. One of its sides are 100 squares of the rational diameter of five each diminished by one, or alternatively 100 squares of the irrational diameter each diminished by two. The other side is 100 cubes of three. This whole geometrical number controls better and worse births. 546b 4– c8 tr. Adam (1900)

Cicero, in a letter to Atticus (VII.13a) tells him that he could not solve his riddle since “est enim numero Platonis obscurius” (referring, presumably, to the number discussed in this passage) and Adam (1902) describes this passage as “notoriously the most difficult in his writings”. While Adam’s claim is somewhat of an exaggeration (one can think of quite a few passages in his later works that give one pause), it is undeniable that the meaning is somewhat opaque<sup>100</sup>. We can begin with a straightforward explanation of the arithmetic before turning to more esoteric matters.

Adam (1902: 264–9) begins his explication by reminding us of the Pythagorean right-angled triangle, which, according to Proclus was ‘life-giving’ and whose sides are 3 and 4. The hypotenuse is, thus, 5 since its sides are 3 and 4 and its area will be six –  $(4 \times 3) / 2$ . The first number that Plato speaks of is the sum of 3 cubed, 4 cubed,

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<sup>100</sup> There are a formidable number of commentaries on this passage; apart from Adam, whom I discuss, modern commentators include Dupuis (1881), Cousin (1834: 324 ff.), Diès (1926), Ahlvers (1952), Brumbaugh (1954), Coumoundouros (2009), Mohr (1981), Allen (1994), Kayas (1972), Bremer (2000), and Švajdak (1988). Proclus and Marsilio Ficino also discuss this at length.

and 5 cubed : 216. Aristotle (*Pol.* V) speaks of 216 as the number in question as does Aristides Quintilianus; the latter adds the 216 is nearly the number of the gestation of the seven-month child. Evidence from Censorinus (discussed in Chapter 1) suggests that the gestation of a seven-month child was exactly 210. Adam offers extensive support for taking 216 to be the number in question and I see no problem with his arguments. The attributes of these numbers is more problematic but we will discuss that later.

We can now turn to the next number. First, we are expected to take 3, 4, and 5 together; their product is the number 60. 60, when “thrice increased” ( $60 \times 60 \times 60 \times 60$ ) gives us the number 12960000, which corresponds to one year in the life of the universe<sup>101</sup>. The number 12960000 is then said to provide us with two *harmonia* – the first must be the 3600, since 36 is “equal an equal number of times” and this is then to be multiplied by 100; 12960000 can be resolved into 3600 (since it is 3600 squared). The other *harmonia* is the one represented by the oblong. First, we arrive at the number 7 since the rational diameter of 5 is 7 – the diameter of a square with the side 5 would be square root 50 and square root 49 is the closest rational number to it since it yields 7. He is thus talking about a hundred squares with the side 7; this gives us  $7 \times 7 \times 100$ , which is 4900; each of the hundred squares, however, is diminished by 1, so we are then left with 4800. The other side is a hundred cubes of 3, namely 2700. 12960000

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<sup>101</sup> Cf. the myth of the *Statesman* (269 c – 274 e).



obtains when we multiply 4800 and 2700. Thus the two *harmonia* that the second number yields will be represented by a square of the side 3600 and an oblong with the sides 4800 and 2700. So much for the mathematical explanations. We are now left with the more vexing problem of the *significance* of this passage, which includes the question of why these two solid figures are called *harmoniai*.

The significance of 216 consists mostly in the fact that it is close to a seven-month long gestation; it is thus fitting to be the number for human animals. 216 was also seen by the Pythagoreans as a ‘nuptial’ number since it was the cube of the number 6 and the number 6 was the product of the first male number, 3, and the first female number, 2 as well as being a perfect number (it is the sum of its factors: 1, 2, and 3). 216 has many other properties, including the fact that it is produced by multiplying 6 and 36, the latter of which is the sum of the Pythagorean *tetraktys* and is also an important number in embryology and the former of which has just been discussed<sup>102</sup>.

In connection with this, we might also recall the discussion of the seven-month child in Chapter 1. There, I mentioned that the Pythagoreans, according to Censorinus, believed in four stages of fetal development: for the first six days, the seed turns into a milky humor; during the following eight days, this humor turns into blood; then after nine more days the blood is turned into hair; finally, after twelve days, the

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<sup>102</sup> There are many aspects of so-called Pythagorean number mysticism that could be brought to bear upon this discussion but I would direct the reader to Adam (1900) for more details since that would lead us a little astray from the point at hand.

human form appears. The numbers in question are 6, 8, 9, and 12: the ratio of 8:6 is that of the fourth, of 9:6 that of the fifth, and 12:6 that of the octave. Furthermore, the sum of these numbers (6+8+9+12), i.e. 35, when multiplied by 6 gives us the number 210, which is one of the two possible number of days of gestation. The number 35, according to Plutarch's commentary on the *Timaeus*, is a "*harmonia*" since it contains all the *harmoniai* of a scale – 210, thus, contains six *harmoniai* and 216, our number, contains these *harmoniai* along with the nuptial number 6.

Now for the second number and the two *harmoniai* that it contains. In order to make sense of this, I think that it is a good idea to follow Adam, who looks to the *Statesman* for some more elucidation. It is in famous myth (*Pol.* 268e ff.) that we find our elusive numbers. At the end of the *Gorgias*, Socrates speaks of the age of Cronos being replaced by the age of Zeus; the former age consisted of unjust judges and entailed the living judging each other at the end of their lives whereas the latter age consisted of just judges and the souls of Minos, Rhadamanthus, and Aeacus would pronounce judgment on mortal souls. We have reason to read the *Statesman* myth against the backdrop of the earlier myth. In the *Statesman*, the young Socrates and the Eleatic Stranger are having a conversation about the definition of a true statesman; one of the definitions describes the statesman as a kind of shepherd or rearer and the myth's purpose is to distinguish the statesman from other rearers. The Eleatic Stranger describes the cosmos as consisting of two circular movements that are in opposite

directions and succeed from one another and which give birth to the divine age as well as to things as they are (*Pol.* 270 b-d)<sup>103</sup>. We will discuss these circular movements in more detail when we turn to the *Timaieus*. In this myth, the first age (that of Cronos) is part of the reverse cycle, with people being born old and growing younger until they disappear; the second age, where we are “now” has the universe moving forwards, with people being born young and aging. The Stranger describes a continuous alteration between these two ages.

Adam points out that the two ages in the *Statesman* myth are described as being very long periods or more or less equal length; the same is true of the two *harmoniai* in the *Republic*. They both (3600 squared and 4800x2700) are equivalent to the massive number 12960000. The first age, in which harmony and concord dominates, can be linked to the square (with its equal sides) and the second age, in which discord and disharmony prevails, can be linked to the unequal oblong. Thus the *harmoniai* here refer to immensely long cycles. Each of these numbers is also the product of the Pythagorean triangle (3x4x5) raised to the power of four; this triangle was, as I mentioned earlier, seen as zoogonic. Adam also, interestingly, sees in these numbers a faithful representation of the analogy between the microcosm and macrocosm. He cites

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<sup>103</sup> Brisson (1976), Carone (2004), and Rowe (1995) all offer an alternative reading of the myth, in which there are three cycles rather than two – these debates, however, are beyond my scope and I retain the traditional interpretation.

evidence from the *Laws* (758b) that Plato counted 360 days in an ordinary year and that the duration of the ages is 360 squared multiplied by 10 squared; 10 is, of course, the Pythagorean perfect number. 12960000 days is, on the basis of a 360-day year, 36000 years – the duration of a human life was seen by Plato as being 100 years or 36000 days; thus a day in the life a mortal corresponds to a year in the cosmic age. Finally, since 35 was a *harmonia* (on account of including all the intervals), 36 is a *harmonia* plus 1 (the number that is the ruler of all, according to a tradition of Pythagorean number mysticism); the cosmic age is then has 360000 *harmoniai* plus 360000 units since each *harmonia* has 1 added to it.

## Chapter 5: *Harmonia* in the *Timaeus*

While the *Republic* and the *Timaeus* were most likely composed more than a decade (if not two) apart — the present orthodoxy being that the *Republic* is a middle-period dialogue and the *Timaeus* a late one<sup>104</sup> — there are undeniable thematic and doctrinal similarities between the two. One could argue, *pace* Cornford, that Plato tries to reinforce the connection between the two dialogues by repeatedly invoking the discussions of the *Republic* and using the word “*chthes*” (yesterday) in connection with this — yesterday’s guests (17a 2), yesterday’s hospitality (17b 2), yesterday’s discussion (17c 1), what was said yesterday (19a 7), and yesterday’s request (20b 1) for an account of the constitution. This use of “yesterday” seems to indicate Plato’s intention to underscore the closeness of the contents of the *Republic* and the *Timaeus* – even though we have reason to believe that decades elapsed between the composition of the two dialogues, the dramatic date of the *Timaeus* is just the day after the that of the *Republic*.

Even if we disregard the above, many of the problems and questions raised in the *Republic* are treated in the *Timaeus*. Plato had proposed an ideal city in the *Republic*

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<sup>104</sup> While GEL Owen (1953) and others tried to argue that the *Timaeus* was a middle dialogue, I am convinced by the arguments offered by Cherniss (1957) and there seems to be little contemporary disagreement about the dating of the *Timaeus*.

and, from what we know, he tried and failed to educate a philosopher-king in Sicily after writing the *Republic* and most likely before writing the *Timaeus*. The beginning of the *Timaetus* — the ‘Myth of Atlantis’ — can be seen as an illustration of his ideal *polis*. His arguments for psychological dualism and his account of a tripartite soul in the *Republic* were not as fully fleshed out as they could have been, especially given how radical the latter probably was. These receive extensive treatment in the *Timaetus* (68e–70a). Even Plato’s doctrine of forms resurfaces (explicitly) in the *Timaetus* and is explained in a clearer manner (27d–28a, 49a, 52a,d etc.). The doctrine of the Forms and the account of transmigration of souls seems to connect the *Timaetus* to the *Phaedo* as well.

With the exception of the *Philebus* (which might have been written after the *Timaetus*), there is just about no discussion of *harmonia* in any dialogue composed after the *Republic* and before the *Timaetus*. I take the significance of *harmonia* in the *Timaetus* to be yet another piece of evidence that there is a strong doctrinal affinity between the *Republic* and the *Timaetus*. The treatment of psychological *harmonia* and cosmological *harmonia* in the *Timaetus* is also the most fully-fledged account that we encounter in the Platonic corpus. We finally see how *harmonia* functions at *all* levels from the universe down to the human body and also learn what the different *harmoniai* have in common. Let us, then, turn to the details of these accounts.

## I. The cosmogonical account of the *Timaeus*

At the beginning of the *Timaeus*, we are presented with a likely story (*eikos mythos*)<sup>105</sup> about the origins and structure of the universe. According to this picture, a Demiurge created the soul of the world (τὴν τοῦ παντὸς ψυχήν) in accordance with harmonic ratios and then fitted it to the world body. The World Soul “shares in reason and *harmonia* [and] is the best of things brought into being by the most excellent of things intelligible and eternal” (37a 1-2). The Demiurge also crafted the human soul along the same lines as the World Soul (42a); the human soul, then, has the same harmonic order as the world soul. However, since the human soul is contained within an imperfect human body, it eventually becomes disorderly (41a-d). We are then told that audible *harmonia* functions as “an ally against the inward discord that has come into the revolution of the soul, for the sake of bringing it into order and consonance with itself” (47c 7-d 7). In this section, I will describe the cosmogonical account of the *Timaeus*, with particular emphasis on the *harmonia* of the world-soul. I will discuss the human soul in the following section.

The account begins with a distinction that will be immediately familiar to anyone who has read Books VI and VII of the *Republic*:

Ἔστιν οὖν δὴ κατ' ἐμὴν δόξαν πρῶτον διαιρετέον τάδε· τί τὸ ὂν αἰεί, γένεσιν δὲ οὐκ ἔχον, καὶ τί τὸ γιγνόμενον μὲν αἰεί, ὂν δὲ οὐδέποτε; τὸ μὲν δὴ νοήσῃ μετὰ λόγου περιληπτόν, αἰὲ κατὰ ταῦτα ὂν, τὸ δ' αὖ δόξῃ μετ'

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<sup>105</sup> See Cornford (1935, p. 30) on the pre-Platonic usages of *eikōs*.

αἰσθήσεως ἀλόγου δοξαστόν, γιγνόμενον καὶ ἀπολλύμενον, ὅντως δὲ οὐδέποτε ὄν.

We must then, in my judgment, first make this distinction: what is that which is always real and has no becoming and what is that which is always becoming and is never real? That which is apprehensible by thought with a rational account is the thing that is always unchangeably real; whereas that which is the object of belief together with unreasoning sensation is the thing that becomes and passes away but never has real being. 27d 5 – 28a 3<sup>106</sup>

This distinction between being and becoming is one of the fundamental postulates of Plato's philosophy and maps onto the distinctions between the intelligible and the sensible and, correlatively, knowledge and opinion. I will go on to argue that *harmonia*, properly speaking, belongs to the first of these series of pairs, and this is made even clearer in the *Philebus*' discussion of measure: measure is self-identical and introduces limit, equality, and commensurability into entities and it belongs to *epistemē* as opposed to sensation. As I hope to show, *harmonia* has an intelligible essence – even though there are many instantiations of *harmoniai* – and this intelligible essence allows it to realize its cosmic function.

According to Timaeus, the Demiurge, the intelligent creator-god, must look to the image of something stable and enduring in creating the world because something that is always becoming and changing will not be good – again, the idea that something stable and eternal is good, whereas something lacking stability is not, will

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<sup>106</sup> All translations are after Cornford (1935) unless otherwise indicated.



not be an unfamiliar one for a reader of Plato. Furthermore, the description of creating something from a model puts one in mind of a passage in the *Sophist* about image-making:

Μίαν μὲν τὴν εἰκαστικὴν ὁρῶν ἐν αὐτῇ τέχνην. ἔστι δ' αὕτη μάλιστα ὁπόταν κατὰ τὰς τοῦ παραδείγματος συμμετρίας τις ἐν μήκει καὶ πλάτει καὶ βάθει, καὶ πρὸς τούτοις ἔτι χρώματα ἀποδιδούς τὰ προσήκοντα ἑκάστοις, τὴν τοῦ μιμήματος γένεσιν ἀπεργάζεται.

One art that I see contained in it is the making of likenesses. The perfect example of this consists in creating a copy that conforms to the proportions (*symmetria*) of the original in length, breadth, and height and in giving moreover the appropriate color to every part. *Sophist* 235d 5– e1

Thus, *measure* will be of great importance in creating a copy of something. Even though the discussion in the *Sophist* is about creating a sensible copy of a sensible entity, a similar principle will presumably be followed in creating a sensible copy of something intelligible. The key point to note is that it is the *proportions* that are copied since they are seen as an essential aspect of the original. The other point to note is that proportions have the ability to be transposed from one entity to another – something sensible could never come close to something intelligible in its *content*; it can, however, have the identical *structure*, where structure is understood as a system of proportions.

Plato returns to the questions of models at 30c where we are told that the model that the craftsman uses is the generic Form of the “intelligible living creature” which contains within it Forms of subordinate species. The defining features of this living

creature are its unity and its uniqueness (31a-b) which are, then, copied into the sensible world by the Demiurge; a unity that encompasses (*periechein*) many parts and in light of which the parts are organized is the principle and the measure of all things. There is a clear contrast between perfect/imperfect, one/many, and limited/unlimited, with the first member of these pairs always being given a positive valence and the second a negative one; it is clear that *harmonia* belongs to the former since it represents unification, limitation, and completeness.

In the early part of the dialogue, Plato also distances himself from a kind of Democritean cosmology when he argues that the world comes to be through the intervention of a rational divine intellect and not merely by chance. He acknowledges the existence of two kinds of causes, one of which is a final cause, to use Aristotelian terminology, and the other of which is necessity (47-48). Plato does not think that the universe comes to be the way it is by mere chance, but rather through a rational process in which notions of measure – specifically *harmonia* – play a crucial role. Nowhere is this more evidence than in his description of the creation of the world's soul. The soul is described as the seat of intelligence (30b) and that which gives life to the ordered whole; the Demiurge creates a soul within the body and places reason within this soul (30b).

The world's soul, which gives motion and rationality to the world as a whole, is

itself a mixture of intermediates<sup>107</sup>:

τῆς ἀμερίστου καὶ αἰ κατὰ ταῦτὰ ἐχούσης οὐσίας καὶ τῆς αὐτῆς περὶ τὰ σώματα γιγνομένης μεριστῆς τρίτον ἐξ ἀμφοῖν ἐν μέσῳ συνεκράσατο οὐσίας εἶδος, τῆς τε ταύτου φύσεως αὐτῆς περὶ καὶ τῆς τοῦ ἑτέρου, καὶ κατὰ ταῦτὰ συνέστησεν ἐν μέσῳ τοῦ τε ἀμεροῦς αὐτῶν καὶ τοῦ κατὰ τὰ σώματα μεριστοῦ· καὶ τρία λαβὼν αὐτὰ ὄντα συνεκράσατο εἰς μίαν πάντα ἰδέαν, τὴν θατέρου φύσιν δύσμεικτον οὔσαν εἰς ταῦτὸν συναρμόττων βίᾳ.

Between the indivisible Being that is ever in the same state and the divisible Being that comes to be in bodies, he compounded a third form of Being composed of both. Again, in the case of Same and in that of Different, he also on the same principle made a compound intermediate between that kind of them which is indivisible and the kind that is divisible in bodies. Then taking the three, he blended them all into a unity forcing the nature of Different, hard as it was to mingle, into union with Same, and mixing them together with Being. *Timaeus*, 34c 4 – 35c 10

The passage tells us what the *relata* of world-soul's *harmonia* are — three of the five

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<sup>107</sup> As almost every modern commentator has noted, this passage is crucial for understanding the doctrine of the soul presented in the *Timaeus*, but, in the words of Plotinus (Enn. IV.ii.2), it is “*to theiōs ἐνigmῆνον*” and it has caused much scholarly dispute, beginning with Xenocrates and Crantor, and continuing until the present day. One of the main problems concerns the ingredients of the soul and, consequently, the number of mixtures that the Demiurge makes. Matters are further complicated because of grammatical difficulties and the use of highly metaphorical language. The primary problem concerns “*au peri*” in 35a 4 and it seems to have divided commentators, ancient and modern. R.D. Archer-Hind (1888, pp. 106–7) and A.E. Taylor (1932, pp. 107) seem to think that “*au peri*” is “clearly” to be omitted even though every extant manuscript retains it as do the commentaries of Proclus and Plutarch. If we omit the words, we can see why Archer-Hind claimed that *hē ameristos ousias* is identical to *tauton* and *peri ta...meristē* is identical to *thateron*; he doesn't recognize *tauton* and *thateron* as logically distinct kinds, denying that each is combined into an intermediate form in the same way that *ousia* is. Paul Shorey (1889, 52–3) objects to this reading, pointing out that we ought to avoid “rashly identifying apparent synonyms” since the *Timaeus* treats “different words as different entities”; to construe the passage as Archer-Hind does means that “some of the meaning escapes.” G.M.A. Grube (1932) echoes this view. Archer-Hind finds support in Sextus Empiricus and Cicero (in translation), who omit the words. However, as Luc Brisson (1974) points out, Cicero is hardly a reliable translator and Sextus also omits “*gignomenēs*” and “*en mesō*” for no obviously good reason. Grube (1932), F.M. Cornford (1937), and Brisson (1974), *inter alia*, offer excellent arguments for retaining “*au peri*”.

*megistē genē* described in the *Sophist*, namely Being (*ousia*), Same (*tauton*), and Different (*thateron*). These three are distinct kinds and each of them has an indivisible, a divisible, and an intermediate form; the soul is constructed out of the intermediate forms of each of the three. On the one hand, we have eternal, noetic ‘Being,’ which is indivisible, and on the other hand we have phenomenal ‘Being,’ which is divisible. The first element of the soul is an intermediate between the two kinds of Being (*ousia*). The Demiurge then creates an intermediate Same and an intermediate Different in the same way as intermediate Being. He then takes these three mixtures — the intermediates, that is — and makes a single uniform mixture out of them.

The soul is an intermediate entity since it possesses the properties of the intelligible and is, at the same time, in motion. It is, thus, by means of the soul that the Demiurge will be able to apply spatio-temporal harmonic proportions as well as measures of movement to all entities; the world-soul is that which communicates proportion to all sensible things and allows a commensurability between the intelligible and the sensible. The order and regularity of things which lend themselves to measurement do not originate in material necessity, but only in the soul and in the intelligence (*nous*) which is found in it. The measured and measurable nature of the world, and the possibility of submitting this world to mathematical measurement as far as possible, do not come from a material principle but from a spiritual principle which is the soul and the intellect installed in it. The *nous* possessed by the soul allows it to

harmonically organize the entire cosmos:

καὶ τὸ μὲν δὴ σῶμα ὁρατὸν οὐρανοῦ γέγονεν, αὐτὴ δὲ ἀόρατος μὲν, λογισμοῦ δὲ μετέχουσα καὶ ἁρμονίας ψυχῇ, τῶν νοητῶν ἀεὶ τε ὄντων ὑπὸ τοῦ ἀρίστου ἀρίστη γενομένη τῶν γεννηθέντων.

Now the body of the heaven has been created visible; but [the soul] is invisible, and, as a soul having part in reason and *harmonia*, is the best of things brought into being by the most excellent of things intelligible and eternal. 36e 5 – 37a 2

The soul, therefore, participates in both intelligible and sensible beings and it thus has a perfection that is linked to the rational capacity to reason and to calculate and it is also a *harmonia* that is a result of its inner measure and its orientation towards the Good. This passage is also significant in that it identifies *harmonia* (and *logismos*) as eternal intelligibles that the soul participates (*metechein*) in, if we follow the reading of Proclus who, in his commentary on this passage, takes “τῶν νοητῶν ἀεὶ” with “λογισμοῦ... καὶ ἁρμονίας”.

The *Timaeus* also spells out the *harmonia* of the soul in the language of mathematical harmonics for the first time in the Platonic corpus. We’ve encountered the idea of a good soul that possesses *harmonia* in the *Republic* as well as the *Phaedo* and the *Republic* gave us reason to believe that the *harmonia* with which Plato was concerned was not merely a sensible *harmonia*; however, we were not told a great deal about *what* this *harmonia* entailed other than a particular manner of structuring a mereologically complex entity. In the *Timaeus*, we are, at last, given a more complete

picture.

Harmonic structure is introduced into the soul in different stages (35–37). In keeping with the metallurgical metaphor (cf. Brisson 1974, pp. 36–41), the demiurge takes the amalgam of the soul stuff and divides it according to intervals, begin with the monad (1), the double of this (2), then three times the monad (3), then double the second (4), then three times the third (9), then eight times the first (8), and finally twenty seventh times the first (27). 1 2 4 8 have double intervals between them whereas 1 3 9 27 have triple intervals between them. Further, there are two middle terms in each interval, again constituted from the same mixed material. The numbers can be arranged into the sacred *tetraktys*, which is a triangular figure consisting of points arranged in four rows; this was, supposedly, an important symbol in the Pythagorean tradition.

Next, the Demiurge puts harmonic and arithmetic means in the double and triple intervals<sup>108</sup>. It is at this point that we start to approach a scale : a series of neighboring tones<sup>109</sup>. The placement of these means produces ratios corresponding to the musical fourth (4:3), the fifth (3:2) and the tone (9:8). After this, the Demiurge ‘fills’ all the 4:3

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<sup>108</sup> The arithmetic mean can be explained as:  $b = \frac{a+c}{2}$ . The harmonic mean is:  $b = \frac{2ac}{a+c}$ . For 2 and 3, the arithmetic mean is  $\frac{5}{2}$ ; the harmonic mean is  $\frac{12}{5}$ . There is no mention of arithmetic and harmonic means in the text itself, but every interpreter has assumed that these are the means alluded to.

<sup>109</sup> Modern commentators all tend to assume that Plato describes here the Dorian form. This, however, is not obvious from the text alone and commentators, ancient and medieval, (e.g. Plutarch, Proclus, and the Byzantine Michael Psellus) were unsure as to whether it was Dorian or Lydian.

ratios with the ratio of the tone. This leaves us with the *leimma* (literally, ‘the left-over’)<sup>110</sup> or the ratio of the semi-tone, which Pythagorean musical tradition identifies with the ratio of 243:256. The placement of the numbers corresponding to the semi-tones is the third and final step. The *leimmata* 512:486 and 768:729 are two and three times the *leimma* in lowest terms, 256:243. The numbers 384 through 768 define a diatonic scale in lowest terms<sup>111</sup>.

In the end, the amalgam of the soul-stuff is cut into two strips, which are then fixed together in an ‘X’ and bent back into a circle (36b-d). Each of these circles is then given a particular motion — Same to the outer and Different to the inner. The inner circle is sub-divided into seven concentric circles, which depend on the outer circle for their motion; they move at different speeds in the same direction. The circle of the Same governs the cognitive powers of the soul with respect to intelligible entities and the circle of the Different governs the cognitive powers of the soul with respect to sensible entities. It is not the case that the soul is just made up of various ingredients. These are ingredients divided up into harmonic intervals and imbued with a particular kind of *motion* that has a particular kind of task.

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<sup>110</sup> Plato doesn’t use “λεῖμμα” which is a technical term in harmonic theory (and one which Proclus uses in his commentary to the *Timaeus*), but he does use the verb “λείπω” to describe what is left over.

<sup>111</sup> A full technical account is beyond my scope here. Jacques Handschin (1950) offers an excellent discussion of the technicalities of this passage and also presents a fairly comprehensive survey of the readings of various commentators although he does, I contend, misidentify the material components of the World-Soul.

Several ancient commentators on these passages of the *Timaeus* have claimed that the soul, for Plato, is a mathematical object since, like mathematical objects, it occupies an intermediate space between being and becoming<sup>112</sup>. Furthermore, the soul is structured according to a *harmonia*; this is not, however, some *audible harmonia* but rather an ideal *harmonia* that is related to number. However, as Brisson (1974, pp. 324–5) rightly notes, this reading is based partly on Aristotle’s assertion that, for Plato, numbers occupy an intermediate space between the sensible and the intelligible and such a reading is based on a misinterpretation of the Divided Line in *Republic VII* which, although somewhat ambiguous about the ontological status of numbers, places them firmly in the intelligible realm and not somewhere in between the intelligible and sensible. We must not make the same mistake as Simmias in simply asserting that the soul *is* a *harmonia* – recall that the structure of the soul is only part of what it is and the discussion of its harmonics has been preceded by an account of its composition. The most neutral reading, for our purposes, is that the soul of the world is a mixture, composed out of intermediate Being, Same, and Different and then *organized* according to a harmonic structure; this is not the same thing as *identifying* it with a *harmonia* or equating it to a mathematical entity.

From our discussions above, we can see that the soul is a composition, a mixture, a gathering. It is not a first principle which possesses a proper and independent nature.

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<sup>112</sup> For example: Plutarch, *de an.* 1023b ff., and Proclus *In Tim.* 11, 153.



On the contrary, it is the result of a composition between, on the one hand, the intelligible and the indivisible, and, on the other hand, the corporeal and the divisible. The soul acquires the properties of the intelligible – unity and perfection – but it also acquires the properties of the sensible – becoming and divisibility. Now it is this encounter which makes the soul a *harmonia* in which measure and proportion have a fundamental function. This idea is expressed by the proportions that exist within the soul. The first principle is in contact with the sensible multitude through the cosmic medium of the soul. Having understood what it means for the soul of the world to be a *harmonia*, let us look more closely at the human soul and at Plato's discussion of disorder and chaos.

## II. The human soul and the human body

The human soul is also created by the Demiurge once he has created the world's soul and body as well as the heavenly bodies and the other gods. The Demiurge uses leftovers of the same mixture that was used to create the World Soul in order to craft the human soul. The description is brief enough to be quoted in full:

Having said this, he turned again to the same mixing bowl in which he had mixed and blended the soul of the universe and poured into it what was left of the former ingredients, blending them this time in somewhat the same way, only no longer so pure as before, but second or third in degree of purity.

Ταῦτ' εἶπε, καὶ πάλιν ἐπὶ τὸν πρότερον κρατῆρα, ἐν ᾧ τὴν τοῦ παντὸς ψυχὴν κεραννὺς ἔμισγεν, τὰ τῶν πρόσθεν ὑπόλοιπα κατεχεῖτο μίσγων

τρόπον μὲν τινα τὸν αὐτόν, ἀκήρατα δὲ οὐκέτι κατὰ ταῦτα ὥσαύτως,  
ἀλλὰ δεύτερα καὶ τρίτα. 41d 5–8

It isn't clear what it means for the human soul to be *deutera* or *trita* with respect to its purity. Cornford (1937, p. 143) suggests that it doesn't mean worse and I am inclined to agree. The human soul is certainly inferior to the World Soul, but perhaps we are best off understanding this as a kind of impurity, much in the way that a metal might be baser than another. At any rate, there is no indication that the human soul has a different or more inferior kind of structure, and that is all that concerns us here. Recall, also, our earlier discussion about the transference of proportions from a model to a copy – the substance may differ, but the proportions lend themselves to being transposed. The fact that the human soul is structured in the same way as the World Soul is not stated here, but it is assumed in the account of the disorderly motion in the human soul (43 d), to which I turn next.

The most important difference between the World Soul and the human soul is that the latter is embodied in an imperfect human body and is consequently receptive to external stimulus in a way that the World Soul is not. This human body is not created by the Demiurge, who alone is capable of creating incorruptible things, but by younger gods. When the World Soul is joined to the body of the world, it begins an intelligent life (36 e). On the other hand, the human soul, upon being embodied, is assailed by a great number of pleasurable and painful sensations and

emotions (42 a ff.) and is subject to violent affections (*biaiōn pathēmatōn*).

We are told that this embodiment causes the revolution of the Same to cease (43 d) — this is the first mention of the circle of the Same in the human soul and the first indication, therefore, that the human soul has the same structure as the World Soul. Next, we are told that the harmonic intervals — τὰς τῶν ἡμιολίων καὶ ἐπιτρίτων καὶ ἐπογδῶν μεσότηας — of the soul are thrown into disarray by this external disturbance. We can see this as further confirmation of the fact that the human soul has the same harmonic structure as the World Soul. When these intervals are disturbed, this causes the circles of the soul to become deformed. The soul is not governed in any way, reason has ceased to function, there is no longer any order in its various motions and, for these reasons, “a soul comes to be without intelligence at first, when it is bound in a body” (44 b). It is imperative that order be restored and we are told in the following passages how this can be done.

Any reader of the *Republic* or *Laws* will be familiar with Plato’s views on the didactic potential of music. These works offer lengthy discussions of modes (*harmoniai*) that are and are not suitable for a proper education. In the *Timaeus*, too, Plato believes in the power of music to cultivate the soul, but goes about describing this from a very different angle. We have already seen that, as in the *Republic*, Plato espouses a dualistic metaphysics in the *Timaeus*, since he distinguishes between the intelligible and the sensible realms; however, unlike in the *Republic*, the sensible world occupies a

considerable degree of importance and it is perception of sensibilia that ultimately allows us to regain intelligible order in our souls.

A reader of Plato's earlier dialogues will be surprised by his claim that sound (*phonē*) and hearing (*akoē*) are a god-given gift (θεῶν δεδωρῆσθαι, 47a). This follows from a passage where we are told that sight, too, has an ethical purpose — it is not given to us merely so that we may have visual perception; it is given to us “so that we may see the revolutions of mind in the heavens and apply them to the cycles of our own thought...imitating the altogether unwavering revolutions of the divine, we may establish soundly their wavering counterparts in ourselves” (47 b-c). Hearing and sight are not gifts per se — they are gifts because of the purpose they serve. Not everyone will use hearing and sight as gifts. We are told, next, that:

λόγος τε γὰρ ἐπ' αὐτὰ ταῦτα τέτακται, τὴν μεγίστην συμβαλλόμενος εἰς αὐτὰ μοῖραν, ὅσον τ' αὖ μουσικῆς φωνῇ χρήσιμον πρὸς ἀκοὴν ἕνεκα ἁρμονίας ἐστὶ δοθέν.

For not only was speech appointed to this same intent, to which it contributes in the largest measure, but also all that part of *mousikē* that is serviceable with respect to the hearing of sound is given for the sake of *harmonia*. 47c 7 – d 2

We know that *mousikē* was a much broader term than our “music” since its basic meaning is simply “any art over which the Muses presided”. Plato emphasizes, though, that the art under question concerns sound which is heard. Further this art is given to us for the sake of *harmonia*, whose motions are like the revolutions of the

human soul (47 d). This *harmonia* is not merely for the sake of sensual pleasure but it is meant to serve a higher ethical purpose in restoring our disordered soul to its original state. While Plato invokes the structure of the human soul here, it seems unlikely that he is identifying this *harmonia* with the suprasensible *harmonia* according to which the Demiurge crafted the World Soul. In the first place, he emphasizes that he is talking about sound that is perceived by human beings. Furthermore, he speaks of people who mistakenly think this useful only insofar as they can derive irrational pleasure — *hēdonē* — from this *harmonia*. It seems unlikely that he considered that the common man would find pleasure in abstract contemplation of harmonic ratios or that there was anything irrational about the pleasure derived from such a contemplation. Even though the *harmonia* being discussed in this passage is a mere sensible instantiation of a more abstract principle, we should be careful not to conflate the two. It is true that sensible *harmonia* is useful only insofar it allows us to ascend to ideal *harmonia*; nonetheless, this sensible *harmonia* has an important part to play in the restoration of psychic order, as we will see.

One of my goals at the outset was to show what, if anything, Plato's different uses of "*harmonia*" had in common. I argued, in the previous chapter, that all the *harmoniai* in question had something to do with the mathematical harmonics discussed in *Republic* VII. In the *Timaeus*, we are told that souls participate in *harmonia* and *logismos*. We are also told that audible *harmoniai* exist and that they are given to us for

the higher purpose of restoring order to the disordered soul. We are, then, left with obvious question: what do the two *harmoniai* of the *Timaeus* have in common? In order to answer this, we will need to understand *how* audible *harmonia* restore intelligible *harmonia* to the human soul. Let us, then, turn to the account of auditory perception in the *Timaeus*.

### III. Restoration of order: hearing, music, and the liver

In the *Timaeus*, perception is, to borrow from Brisson(1997), “a Janus-like phenomenon with both a physical and psychological face”; consequently, we must pay attention to both aspects. It should also be noted that this account is situated the second part of the *Timaeus*, where the works of necessity (rather than reason) are described. According to this account, the objects of perception are secondary substances : are aggregates of the four elements — fire, water, air, earth — and are responsible for producing various affections in human beings (56 b-c). The perception of these secondary substances is the cause of the initial disorder that human souls are thrown into when they are first embodied.

Certain affections, such as pleasure, pain, heat, cold, heaviness, and lightness, are perceived by the entire body. Other affections have more specialized organs that perceive them. For instance, taste is perceived by the tongue, color by the eye, and

sound by the ear; this is fairly intuitive. However, the process doesn't end here. All perception ends in another organ — we see with the eye and this perception ends in the head, where the actual vision takes place. The same is true of sound — we hear with the ear but auditory perception, surprisingly, ends in the liver (67 b). We will take a closer look at this later in the section.

In the *Timaeus*, as in the *Republic*, Plato offers a tripartite account of the soul. However, in the *Timaeus*, unlike in the *Republic*, the different parts of the soul are said to reside in different parts of the body. Further, the rational part is described as the immortal part (49 c-d, 69 c-d, 90a) and the spirited and appetitive as mortal parts. The immortal part has its seat in the head; the spirited part has its seat in the region of the heart and lungs; the appetitive part has its seat in the region of the belly and liver (69 c-d).

Further, each part of the soul has its own function, which is tied to its physical location. The spirited part has its guardroom (δορυφορικὴ οἰκίσις) in the heart which is the fountain of blood; when we are agitated in some way, the blood boils, and the message is transmitted throughout the body. The lungs, which are in the same part, act for the sake of the heart — they cool it when it is boiling so that it can better serve the rational part. The seat of the appetitive part is the lower stomach. Here, food and drink are collected in order to satisfy our desires. Apart from the stomach itself, the liver and spleen are also situated in this part and play important roles. The human body

is made up of the same four elements as secondary substances and has its ἀρχή in the marrow (μυελός) (73 b). The organs have not only physiological but also *ethical* purposes. For example, the *physiological* function of the lungs is the cooling of the blood around the heart, but this is for an ultimately *ethical* purpose: to make the spirit responsive to reason (70 c–d)<sup>113</sup>.

Now we know, roughly, what the objects of perception are. We know, also, that some are perceived by the entire body whereas others are received by particular external organs (ears, eyes, tongue, etc.) and that the perception travels from these to parts of the soul that have their seats in particular parts of the body (head, chest, lower abdomen). Further, some organs have specific functions related to the part of the soul that is located in their vicinity. The remaining puzzle is the process whereby perceptions travel from the external organs to the parts of the soul.

One likely conjecture is that Plato follows his predecessors by positing that this happens via blood vessels. The stomach converts food and drink into blood (79 a); the heart, which is the knot (ἄμμο) and the fountain (πηγή) of blood (70 b), is responsible, along with the lungs, for pumping it all over the body via narrow channels (πάντων τῶν στενωμῶν) (70 a). This reading seems to find support in the definition of sound, where sound goes from the ear to the brain and is then conveyed further by blood:

ὅλως μὲν οὖν φωνὴν θῶμεν τὴν δι' ὠτων ὑπ' αἵματος ἐγκεφάλου τε καὶ αἵματος μέχρι ψυχῆς πληγὴν διαδιδομένην, τὴν δὲ ὑπ' αὐτῆς κίνησιν,

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<sup>113</sup> See Steel (2001) for more on the ethical purpose of the human body in the *Timaeus*.



ἀπὸ τῆς κεφαλῆς μὲν ἀρχομένην, τελευτῶσαν δὲ περὶ τὴν τοῦ ἥπατος  
ἕδραν, ἀκοήν· 67 a-b

Unfortunately, not much is said, explicitly, about the role of blood vessels in perception, but this remains the most likely scenario.

So to summarize thus far, an external object, made up of the primary elements, causes affections in perceiving beings. In the case of perceptions like sight, hearing, and taste, there are specific external organs that receive specific affections. The first contact is between the object and the external sense organ. Next, the motion received by the sense organ is conveyed to the brain, presumably via the blood vessels. Finally, the brain passes this information to the soul; we can infer this final step from the first passage on sight, at 45c:

ὁμοιοπαθὲς δὴ δι' ὁμοιότητα πᾶν γένόμενον, ὅτου τε ἂν αὐτό ποτε  
ἐφάπτηται καὶ ὃ ἂν ἄλλο ἐκείνου, τούτων τὰς κινήσεις διαδιδόν εἰς  
ἅπαν τὸ σῶμα μέχρι τῆς ψυχῆς αἰσθησὶν παρέσχετο ταύτην ἣ δὴ ὁρᾶν  
φάμεν.

And this having become similar because of its similarity, distributes the motion of each object it touches or which touch it, through all the body as far as the soul and brings about the sense-perception we call seeing. (emphasis mine)

Let us now turn to the account of auditory perception in order to see an example of the process described above. It should also help us see what it means for sensation to

go to (μέχρι) the soul<sup>114</sup>. Plato's discussion of sound and hearing at 67a-c is relatively straightforward. Sound (φῶνη) moves through air, into the ears, then into the brain and blood after which it is impressed upon the soul (67a-b). Hearing (ἀκοή) is the motion (κίνησις) caused by sound and it ends in the liver, which houses the appetitive part of the soul. As with all perception, there are two aspects to aural perception — the purely physiological, which has to do with the interaction of ear drums with external air and the psycho-physiological, which has to do with the transmission of this sound from the brain to the appetitive part of the soul, housed in the liver.

According to the physiological account higher pitches come from swifter movements and lower pitches from slower ones; further, regular movements produce even (λεῖος) sounds and irregular ones produce harsh (τραχύς) sounds. Plato mentions that a discussion of concordance (συμφωνία) will be at a later point in the dialogue; this is, indeed, the case if we view 80a as a resumption of his discussion of sound and hearing. Here, he explains *harmonia* in connection with concepts introduced in the earlier passage — swiftness and slowness, high and low pitch. We are told that a high pitch note and a low pitch note, when heard together, are concordant as long as they produce uniform motion in us; notes are discordant when they fail to produce uniform motion within us (67a).

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<sup>114</sup> My discussion of perception closely follows that of Barker's (2000). There are, however, alternative readings of these passages, the most recent of which is Fletcher's (2016). See also Moss (2012) and Lorenz (2012)

We are told, then, that concordant sound is an imitation of the divine *harmonia* and that all this sound is truly valuable only to the intelligent — even though perception isn't a purely intellectual activity, only the intelligent will derive delight (εὐφροσύνη) from it while the unintelligent will only find bodily pleasure (ἡδονή) in it (80a). In the *Laws*, too, we are told how it is not enough to hear 'sweet *harmoniai*'; those who know take delight in morally good *harmoniai* which take the *kalon* as their model. In order to see how the intelligent perceive sound in the *Timaeus*, we must return to the question of how sound is perceived by the liver.

On the tripartite model described earlier in this chapter, the spirited part is able to communicate with the rational part and is able to be regulated by it because of the structure and function of the heart and lungs. However, appetite cannot communicate with reason in the way that spirit can, and we need some way to regulate the untamed beast that is unable to listen to reason and that is susceptible to all manners of false impressions (71a). Since this is a wholly irrational part, the gods found that it could communicate with the rational part by means of images, and the liver is responsible for receiving and transmitting these images. We are told that its purpose is that "the influence proceeding from reason should make impressions of its thoughts upon the liver, which would receive them like a mirror and give back visible images" (71 b). As Cornford (1997, p. 282) notes, we should note that the discussion centers around the "the purposes organs serve as the seats of feelings and desires that *contribute to moral*

*conduct.*” The task of the liver is the transformation of concepts (sent to it by the brain) into images that are comprehensible to the irrational soul, and all of this is for the purpose of being moral.

When *sound* is transmitted to the liver, the liver presumably produces images that reflect the sound passed down to it and this must elicit some kind of irrational response from the appetitive soul. This is, perhaps, the case of the unintelligent people who only derive pleasure from audible *harmonia*. But how are we to understand the delight of the intelligent ones if it is just the irrational appetite that perceives all sound? If audible *harmonia* allows us to restore order to our souls, it must be because of the intelligent ones who recognize it in relation to ideal *harmonia*.

Barker (2000, p. 96 ff.) suggests that we should look at passage in which we are told that *harmonia* gives true delight to intelligent perceivers in its broader context. The preceding passages demonstrate how respiration occurs because of the mechanical process of *periōsis*, which Cornford (1997) translates as “circular thrust”. When we breathe, there is no void for our breath to go into and so it displaces the nearby air. This successive displacement takes place simultaneously so that every time breath is expelled, it is replaced as well; this takes place in a circular motion “as a wheel is driven round” (79c). This principle can also be used, we are told, to explain other phenomena such as the case of medical instruments (79e) and – importantly for our purposes – concordant sounds (80a). The movement of hearing is also a cyclical one and, if this is

the case, then the sound that goes from the head down to the liver must return, once more, to the head where the rational part is capable of recognizing that the audible *harmonia* is an imitation of divine *harmonia* and, through this recognition, the rational perceiver is aided in its assimilation, once more, to the initial harmonic order that was bestowed upon the human soul by the Demiurge.

While this account may show why and how *harmonia* must be regained by the immortal part of the soul and also what the two *harmoniai* have in common, *prima facie* it has little to do with the description of the harmonious soul that we encountered in the *Republic*. Unlike in the *Republic*, Plato makes no special mention of the need to harmonize the three parts of the soul in order to attain virtue. However, I contend that even though Plato does not make the same argument, such a view is evident in the teleological descriptions of the mortal parts of the soul and their bodily dwellings.

He repeatedly underscores the fact that these parts must be obedient to reason's rule and that the mortal soul and body is constructed so as to be conducive to this. Each of the mortal parts has its own specific purpose, but everything that it does is in service to the immortal part. We are also told that it is imperative that the three parts of the soul be kept in due proportion (*symmetria*) to one another (90a). The immortal part has *harmonia* as a structure but there also must exist a harmonic proportion *between* the three parts (and, indeed, between body and soul, 87c) for the sake of the *harmonia* of the immortal part. As in the *Republic*, the lower parts of the soul are not to be eliminated

but are merely to be brought into order. Further, the proper communication between the three parts of the soul is crucial in order for audible *harmonia* to fulfill its purpose in aiding the restoration of the structural *harmonia* of the immortal part of the soul. We needn't see the account in the *Timaeus* as one that contradicts that of the *Republic*; indeed, it can be seen as one that augments it. The idea that the three parts of the soul must be harmonized is implicit in the discussion here and, further, we learn why precisely they must be harmonized.

The proportion between the three parts of the soul and the *harmonia* between the body and the soul both serve the highest part of the soul. The highest part of the soul is immortal and divine and has been thrown into disarray by the mortal parts. Just as the mortal parts were culpable for the disorder they can also be responsible for bringing about order. This harmonic order imitates the harmonic structure of the world-soul and it is in this affinity that virtue and happiness consist. This is explicit at the conclusion of the dialogue, in a passage that is significant enough to warrant extensive quotation:

But if his heart has been set on the love of learning and true wisdom and he has exercised that part of himself above all, he is surely bound to have thoughts immortal and divine, if he shall lay hold upon truth, nor can he fail to possess **immortality in the fullest measure that human nature admits**; and because he is always **devoutly cherishing the divine part** and maintaining the guardian genius that dwells within him there is but one way of caring for anything, namely to give it the nourishment and motions proper to it. The motions akin to the divine part in us are the thoughts and revolutions of the universe; these,

therefore, every man should follow, and correcting those circuits in the head that were deranged at birth, **by learning to know the harmonies and revolutions of the world, he should bring the intelligent part, according to its pristine nature, into the likeness of that which intelligence discerns**, and thereby win the fulfillment of the **best life set by the gods** before mankind both for this present time and for the time to come.

τῷ δὲ περὶ φιλομαθίαν καὶ περὶ τὰς ἀληθεῖς φρονήσεις ἐσπουδακότι καὶ ταῦτα μάλιστα τῶν αὐτοῦ γεγυμνασμένῳ φρονεῖν μὲν ἀθάνατα καὶ θεῖα, ἄνπερ ἀληθείας ἐφάπτηται, **πᾶσα ἀνάγκη που, καθ' ὅσον δ' αὖ μετασχεῖν ἀνθρωπίνῃ φύσει ἀθανασίας ἐνδέχεται, τούτου μηδὲν μέρος ἀπολείπειν**, ἅτε δὲ αἰεὶ θεραπεύοντα τὸ θεῖον ἔχοντά τε αὐτὸν εὖ κεκοσμημένον τὸν δαίμονα σύνοικον ἑαυτῷ, διαφερόντως εὐδαίμονα εἶναι. θεραπεία δὲ δὴ παντὶ παντὸς μία, τὰς οἰκείας ἐκάστῳ τροφὰς καὶ κινήσεις ἀποδιδόναι. τῷ δ' ἐν ἡμῖν θείῳ συγγενεῖς εἰσιν κινήσεις αἱ τοῦ παντὸς διανοήσεις καὶ περιφοραί· ταύταις δὴ συνεπόμενον ἕκαστον δεῖ, τὰς περὶ τὴν γένεσιν ἐν τῇ κεφαλῇ διεφθαρμένας περιόδους ἡμῶν ἐξορθοῦντα διὰ τὸ καταμανθάνειν τὰς τοῦ παντὸς ἀρμονίας τε καὶ περιφοράς, τῷ κατανοομένῳ τὸ κατανοοῦν ἐξομοιωῖσαι κατὰ τὴν ἀρχαίαν φύσιν, ὁμοιώσαντα δὲ τέλος ἔχειν τοῦ προτεθέντος ἀνθρώποις ὑπὸ θεῶν ἀρίστου βίου πρὸς τε τὸν παρόντα καὶ τὸν ἔπειτα χρόνον. *Timaeus* 90b 6 — 90d 7 (emphases mine)

The best life entails an approximation of the world-soul and becoming as god-like as possible — ὁμοίωσις θεῷ κατὰ τὸ δυνατόν, as Plato puts in in the *Theaetetus* (176b 1). The way in which we approximate the world-soul is by apprehending harmonic structure in the musical sounds that we perceive, and internalizing it, thereby allowing our souls to imitate the world-soul in structure. Since we are mortal embodied creatures, due proportion between the immortal and mortal parts of the soul as well as between soul and body are necessary for the proper cherishing and cultivation

of the divine part. This passage also recalls *Republic* VII where we learn that astronomy and harmonics, properly speaking, play an important role in dialectic since they lead us upwards towards the Form of the Good. Here, too, we are required to ‘see’ beyond astronomy<sup>115</sup> and ‘hear’ beyond audible *harmonia* to the underlying structure and motion.

In this chapter I discussed two kinds of *harmoniai* described in the *Timaeus* : the one possessed by souls and audible *harmonia*. We are told, at the beginning, that the World Soul, with which the human soul is structurally identical, was constructed by the Demiurge with an intelligible model in mind and that the soul participates in *harmonia* and reason (37a). The divine soul of the world retains the *harmonia* bestowed upon it by the Demiurge but the human soul loses it when embodied in the imperfect human body. The end of the *Timaeus* tells us that the best life consists in regaining that psychic *harmonia*. We saw how audible *harmonia* helps humans regain this. In explaining this, we also saw that all these apparently different *harmoniai* are *harmoniai* in virtue of possessing a particular structure. The reason that audible *harmonia* can help the intelligent hearer regain psychic *harmonia* is that the intelligent hearer intellects the structure that lies behind the pleasing sounds. We have, then, a confirmation of the conclusion that I suggested in the previous chapter: *harmonia* is an mathematical structure which, when various entities participate in it, serves to make them better

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<sup>115</sup> For an overview of the ethical function of astronomy, see Carone (1997).



since harmonic order is inherently good.

## Chapter 6: *Harmonia* in the macrocosm and microcosm: some conclusions

We have now seen, through a survey of some key dialogues, how *harmonia* functions at various levels within the Platonic universe. Let us begin by surveying the manner in which *harmonia* functions in the microcosm and macrocosm before attempting to answer our original questions : what, if anything, do these various *harmoniai* have in common and what is the role of *harmonia* in Plato's philosophy?

### I. *Harmonia* in the (human) soul and body

In the early dialogues, we learned that a good individual is one who is harmonious in his words and deeds (*Laches*) and one whose soul is orderly and thus healthy (*Gorgias*). This order (*kosmos, taxis*) possessed by a virtuous soul is later described as a *harmonia*. In the *Phaedo*, for instance, Socrates argues at length that the soul cannot be a *harmonia* of bodily constituents; however, the reason for this is that *harmonia* is something that a soul possesses and not something that a soul is – good souls are harmonious ones and bad souls lack harmony. This idea is reinforced first in the *Republic* and then later in the *Timaeus*.

One can see Socrates' description of justice and virtue in the *Republic* almost as a continuation of his argument against Simmias' soul-*harmonia* thesis in the *Phaedo*. It wasn't clear, in the *Phaedo* at least, what it meant for good souls to be 'harmonious'

since nowhere in the *Phaedo* did Plato hint at the soul being mereologically complex. The *Republic*, however, introduces the idea of a tripartite soul and it is here that we are given a fully-fledged account of what it means for a soul to have *harmonia*. If a soul is harmonious, each of its parts performs its own function and accepts its role in the hierarchical scheme. The *Timaeus* introduces *harmonia* into the soul at two levels : first, the rational part of the soul has the same harmonic structure as the soul of the world and second, since in the *Timaeus*, too, the embodied human soul is tripartite, there must be a *harmonia* between the different parts of the soul. As I noted in the previous chapter, Plato also claims that the soul participates (*metechein*) in reasoning (*logismos*) and *harmonia*, both of which are described as eternal, intelligible entities (*Tim.* 36b).

In all these cases, *harmonia* is always described as the good state of the soul. The argument in the *Phaedo* was that the soul could not *be* a *harmonia* since to claim this would be to ignore moral distinctions between souls since only good souls possess *harmonia*. In the *Republic*, degenerate states, such as oligarchy, were marked by their possession of dualistic nature rather than a unitary one. The unity that is conferred upon the tripartite soul by *harmonia* is not an unearned unity that just any soul has – it is a unity that is possessed only by virtuous souls. Nor is *harmonia* just a synonym for ‘proportion’ or ‘fitting together’ since we saw that the soul can be bound together in other ways as well – for example, in an isonomic proportion – but that *harmonia* is a proper fitting together in such a way that virtue results. Finally, in the *Timaeus*, the

soul of the world, which is perfect and created by the Demiurge, possesses harmonic structure as does the immortal part of the human soul (which is also created by the Demiurge) *before* it is embodied. Upon being embodied, the human soul loses its perfect structure and has to undergo extensive education and training in order to regain it. Here, too, *harmonia* is the *best* kind of fitting together of a mereologically complex entity.

Not only is the presence of *harmonia* supposed to bring about goodness and health, but its absence leads to vice and to sickness. We saw this, first, in the *Phaedo* where the bad soul was said to be *anarmostos* (ill-tuned) and lacking a *harmonia*. Then, in the discussion of degenerate constitutions and souls in *Republic VIII*, we saw that, in each case of degeneracy, there was a perturbation of the harmonic order that was possessed by the aristocratic constitution and soul.

The *Timaeus* (86b – 87b) offers us an extensive account of the origins of sickness and vice, in bodies as well as souls. In this dialogue, psychic disease is described as a kind of “*anoia*” – the absence of intellect. We saw, in the previous chapter, that the intellect was tasked with restoring the initial *harmonia* by its apprehension of ineligible *harmonia* and, further, that it was responsible for maintaining a harmonic balance between the three parts of the soul. When it fails to fulfil these tasks, ignorance (*amathia*) and madness (*mania*) result. Thus, the possession of harmonic order is in every

way good and its absence results in a degenerate and vicious state. This is true not only of the soul but also of the body.

In the *Timaeus*, in particular, the harmonizing is not only within the soul, but also *between* the soul and the body – this is, of course, a direct consequence of the fact that the various parts of the soul are given bodily locations in this dialogue. . In the *Timaeus*, the body can be both the cause of psychic illness and can help cure it. In this dialogue, the right proportion amongst elements means conformity to *physis* with imbalance being a disorder that creates illness in the body and the soul. In fact, *physis* has been created by the Demiurge in the best possible way, yet it presents imbalances due to the disorder of elements in the *chora*. For this reason we have need of both a demiurge and the practice of a doctor who heals the soul and the body taking as a model the harmonic constitution of the world.

Plato's theory of the somatic health rests on an analogy between the universe and the body just like his theory of psychic health. The body is healthy when its parts are arranged in harmonic proportion and each of the parts have their own movement (vibrations, *Tim.* 88 d) that is analogous to the movements of the heavens. However, since the body is mortal, the environment and the relationship between it and the soul can be potential problems. In the *Epinomis*, Plato remarked that the art of medicine is a defense against the ravages of the environment on a living organism (976 a) and in the *Republic* (576 e) we are told that a slight shock from the external world is often all

it takes to cause somatic disease. In the *Timaeus*, too, somatic health is precarious and must be defended; this defense requires the imitation of celestial motion in order for the preservation of health.

We are also told, explicitly, that positive somatic states consist in order, proportion, measure, and *harmonia*:

πάν δὴ τὸ ἀγαθὸν καλόν, τὸ δὲ καλὸν οὐκ ἄμετρον· καὶ ζῶον οὖν τὸ τοιοῦτον ἐσόμενον σύμμετρον θετέον. συμμετριῶν δὲ τὰ μὲν σμικρὰ διαισθανόμενοι συλλογιζόμεθα, τὰ δὲ κυριώτατα καὶ μέγιστα ἀλογίστως ἔχομεν. πρὸς γὰρ ὑγιείας καὶ νόσους ἀρετὰς τε καὶ κακίας οὐδεμία συμμετρία καὶ ἀμετρία μείζων ἢ ψυχῆς αὐτῆς πρὸς σῶμα αὐτό· ὧν οὐδὲν σκοποῦμεν οὐδ' ἐννοοῦμεν, ὅτι ψυχὴν ἰσχυρὰν καὶ πάντῃ μεγάλην ἀσθενέστερον καὶ ἔλαττον εἶδος ὅταν ὀχῇ, καὶ ὅταν αὖ τὸναντίον συμπαγῆτον τούτῳ, οὐ καλὸν ὅλον τὸ ζῶον – ἀσύμμετρον γὰρ ταῖς μεγίσταις συμμετρίαις – τὸ δὲ ἐναντίως ἔχον πάντων θεαμάτων τῷ δυναμένῳ καθορᾶν κάλλιστον καὶ ἐρασμιώτατον.

Now all that is good is beautiful, and what is beautiful is not ill-proportioned. Hence we must take it that if a living thing is to be in good condition, it will be well-proportioned. We can perceive the less important proportions and do some figuring about them, but the more important proportions, which are of the greatest consequence, we are unable to figure out. In determining health and disease or virtue and vice no proportion or lack of it is more important than that between soul and body—yet we do not think about any of them nor do we realize that when a vigorous and excellent soul is carried about by a too frail and puny frame, or when the two are combined in the opposite way, the living thing as a whole lacks beauty, because it is lacking in the most important of proportions. That living thing, however, which finds itself in the opposite condition is, for those who are able to observe it, the most beautiful, the most desirable of all things to behold. *Timaeus*, 87 d

While the *Republic* tells us that somatic *harmonia* is a pleasing auxiliary to psychic *harmonia*, the *Timaeus* tells us that we should exercise neither the soul without the body nor the body without the soul (88 b). Somatic *harmonia* requires that the body be symmetric to the soul because this lack of symmetry is apt to cause all kinds of bodily aches and pains. A soul that is too strong for the body will shake up the whole body from within it and cause it to suffer all kinds of ailments and an overly strong body can make the soul weaker with excessive food and make it dull and forgetful (*Tim.* 88 b).

Even though the *Republic* doesn't place as much emphasis on somatic *harmonia* as the *Timaeus*, it certainly does not ignore the question. In the Hippocratic treatise, *Airs, Waters and Places* a healthy city is characterized by seasons in equilibrium: such equilibrium is the equivalent of moderation (*metriotes*), a state where there are not sudden changes (*metabolē*) because such changes are the ecological equivalent of moral *hybris*. A similar view can be found in *Resp.* 380 e. Plato recognizes that the body is altered by food, drink, labors, and, like all living organisms, by sun, winds, and other similar affections as well. However, he says, it is healthiest when it is least altered by these. This stability and balance can only come about when it is in a stable state of *harmonia*. Health, for Plato, is nothing besides stable order that involves putting somatic elements in their proper balance:

Ἦστι δὲ τὸ μὲν ὑγίειαν ποιεῖν τὰ ἐν τῷ σώματι κατὰ φύσιν  
καθιστάναι κρατεῖν τε καὶ κρατεῖσθαι ὑπ' ἀλλήλων, τὸ δὲ νόσον  
παρὰ φύσιν ἄρχειν τε καὶ ἄρχεσθαι ἄλλο ὑπ' ἄλλου.

But to produce health is to put the elements that are in the body in their natural relations of mastering and being mastered by one another; while to produce disease is to establish a relation of ruling and being ruled by one another that is contrary to nature. *Resp.* 444d

Somatic health is important – the educational program described in Book III involves both *mousikē* and *gymnastikē* – and somatic health consists in a kind of *harmonia* as well. However, excessive care of the body, without regard for the soul, is to be discouraged (*Resp.* 407 e). At the end of Book IX, we are told:

Ἐπειτά γ', εἶπον, τὴν τοῦ σώματος ἔξιν καὶ τροφήν οὐχ ὅπως τῇ θηριώδει καὶ ἀλόγῳ ἡδονῇ ἐπιτρέψας ἐνταῦθα τετραμμένος ζήσει, ἀλλ' οὐδὲ πρὸς ὑγίειαν βλέπων, οὐδὲ τοῦτο πρεσβεύων, ὅπως ἰσχυρὸς ἢ ὑγιής ἢ καλὸς ἔσται, ἐὰν μὴ καὶ σωφρονήσῃν μέλλῃ ἀπ' αὐτῶν, ἀλλ' αἰὲ τὴν ἐν τῷ σώματι ἁρμονίαν τῆς ἐν τῇ ψυχῇ ἕνεκα συμφωνίας ἁρμοττόμενος φανεῖται.

Second, as regards the condition and nurture of his body, not only will he not give himself over to bestial and irrational pleasure, and live turned in that direction; but he won't make health his aim nor give precedence to the ways of becoming strong or healthy or beautiful, unless he is also going to become temperate as a result of them. On the contrary, it is clear that he will always be tuning the *harmonia* of his body for the sake of the concord of his soul. 591 c-d

It is also important for the soul to be harmonized *with* the body:

Οὐκοῦν, ἦν δ' ἐγώ, ὅτου ἂν συμπίπτῃ ἐν τε τῇ ψυχῇ καλὰ ἦθη ἐνόντα καὶ ἐν τῷ εἶδει ὁμολογοῦντα ἐκείνοις καὶ συμφωνοῦντα, τοῦ αὐτοῦ μετέχοντα τύπου, τοῦτ' ἂν εἴη κάλλιστον θέαμα τῷ δυναμένῳ θεᾶσθαι;

When a man's soul has a beautiful character and his body matches it in beauty and is thus in harmony (*symphōnia*) with it, that harmonizing



combination, participating in the same type, is the most beautiful spectacle for anyone who sees. *Resp.* 402d 1–4

The best kind of person is one whose bodily nature matches or harmonizes with that of this soul (494 b). Somatic *harmonia* does not bring about psychic *harmonia* but a good soul, i.e. one that possesses *harmonia*, is one that will bring about somatic *harmonia* (403d); the reason for this is, perhaps, that the soul can control the body and guide it whereas the body cannot do so to the soul and, in general, the soul is more “honorable” than the body (592 b). It is also significant that psychic and somatic *harmonia* “participate in the same type”; in other words, there is a common structure that is shared by both kinds of *harmonia*.

I did not discuss the *Symposium* but it is worth mentioning that there, too, Plato has the physician Erixymachus discourse on somatic *harmonia*<sup>116</sup>. According to Erixymachus, the body manifests Eros’ double nature in the coexistence of healthy desires and unhealthy desires. Medicine is the science of the erotic tendencies of the body to fill and empty itself and it enables the distinction between healthy and unhealthy desires. The task of the doctor is to transform the strife between the two kinds of Eros into agreement by operating on opposites such cold/hot, bitter/sweet, dry/wet. The doctor is thus like a musician in that he is able to create *harmonia* from an initial discord. He operates thus through a technique which is able to transform the

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<sup>116</sup> See Edelstein (1945) on why we should take Erixymachus seriously.

discordant into concordant. As Candiottto (2015) has noted, music is then the science of love of *harmonia* and rhythm. Bodily health obtains when the opposites find themselves reciprocally united in an ordered love and support each other in harmony and temperate mixture. Unlike with Heraclitus, the focus is on agreement and on unity rather than on dynamic, shifting balance and strife.

We can conclude, thus, that in the soul and in the body, a positive state is characterized as a harmonic order and, further, that *harmonia* in both these cases seems to be a kind of *structure* that can be imposed upon both body and soul. We also saw that, both in the *Timaeus* and in the *Republic*, Plato uses the language of participation (*metechein*) when talking about intelligible *harmonia*; my key contention is that this intelligible *harmonia* is *harmonia* par excellence for Plato and it is this *harmonia* that he has in mind when he talks about the good and beautiful structure present in virtuous human souls and healthy human bodies.

## II. *Harmonia* in the (cosmic) soul and body

The *Timaeus* is our primary point of reference for Plato's cosmological views, especially his views on the harmonically structured *kosmos*. As I discussed in the previous chapter, the Demiurge, who is either identified with divine intellect or bears a close relationship to it, creates the body of the world and the body of the soul by copying the structure of perfect model. The model to be copied is unique, united, and wholly perfect – it is

seemly, then, that the structure that the Demiurge copies is a harmonic one since all those are also attributes of *harmonia*.

The world's body is made out of the four basic elements and the world's soul is made out of intermediates mixtures of Being, Same, and Different. In terms of composition, they are wholly different and they are also different in terms of function, since it is the soul that is the seat of all intelligence and of motion. However, what the body of the world and its soul have in common is that the components, in both cases, are arranged proportionally. The four elements are arranged according to a geometric mean in the world's body and the world soul includes arithmetic and harmonic means. As Barker ( 2011, p. 200) has noted, these three means together make up the basis of the Platonist program of harmonics. Proclus (II.211) also says of the World Soul:

συλλήβδην οὖν εἵπωμεν, ὅτι πάσης ἁρμονίας τῆς ἐν τοῖς κέντροις, τῆς ἐν τοῖς στοιχείοις, τῆς ἐν ταῖς σφαίραις ἡ ψυχὴ περιέχει τοὺς λόγους· διὸ καὶ τὴν ἁρμονίαν αὐτῆς παντελῆ καὶ νοερὰν εἶναι φαμεν καὶ οὐσιώδη κατ' αἰτίαν προηγουμένην τῆς αἰσθητῆς ἁρμονίας...

To sum up, then, we may say that the soul encompasses the ratios of all the *harmoniai* that are in the centers, in the elements, and in the spheres; for this reason we say that its *harmonia* is perfect, intellectual, and substantial (*ousiōdē*), foreshadowing perceptible *harmoniai* in a causal manner (*kat' aitian*)...

He is, presumably, claiming that there is a casual relationship between the *harmoniai* in the world-soul and the *harmoniai* that are perceptible – we saw that the *harmoniai* in the World Soul were themselves copies of something intelligible and the world as a

whole serves as a model for the *harmonia* that is to be approximated by all entities in the sub-lunary world. The World Soul is an intermediate entity because it possesses the properties of the intelligible and, at the same time, it is in motion. It is therefore the principle by which the Demiurge will apply measure to all things. The soul is thus, in a certain sense, a principle of measure in that it is the being which, by its relation to the intelligible, communicates measure – which is, in this case, *harmonic* measure – to sensible entities.

*Harmonia* is an important element in Plato's cosmology because the soul of the world is imbued with *harmonia* by the Demiurge and this harmonious soul of the world is the very principle of cosmic life. Furthermore, the introduction of rationality by means of musico-mathematical proportions is what allows *order* to be imposed upon an otherwise chaotic, irrational, and mechanistic world.

### III. *Harmonia* in the *polis*

We saw how *harmonia* is present at two levels in Plato's ideal city in the *Republic* : in the souls of its citizens but also between the classes within the city. The treatment of *harmonia* in the *polis* runs parallel to the treatment of *harmonia* in the *psychē*, and this is a natural consequence of the analogy between the two. I do not think it coincidental that Plato chose to describe justice as a *harmonia* in a dialogue that treats the city and

the soul analogously – the ability to be transposed from the intelligible to the sensible and the ability to be instantiated in various domains is something unique to *harmonia* even in its pre-Platonic usage. In its Platonic usage, as an intelligible structure, it makes even more sense to use *harmonia* to describe parallel states in the city and the soul since they are, presumably, the result of parallel structures.

A city that approximates *harmonia* as closely as possible will be a just and virtuous city, wherein the appropriate parts master and are mastered. The further a city moves away from the ideal *harmonia*, the less it possesses attributes such as perfection, stability, and, most importantly, unity – this is the case for the various vicious constitutions discussed in Book VIII of the *Republic*. We might recall that all the vicious constitutions had in common the fact that the worse parts mastered the better parts or, as in the case of democracy, the better parts failed to master the worse parts, with the result that the cities were fragmented and factious. Thus in the city, as in the universe and in the individual, *harmonia* is a good-making structure.

#### IV. Plato on *harmonia* : some answers

In Chapter 1, I showed how *harmonia* was used by a range of pre-Platonic thinkers in a variety of different contexts: Homer used *harmonia* to describe the joining together of planks of wood to make a boat as well as to describe agreement more abstractly; Pindar spoke of musical *harmonia* and also of *harmonia* in our lives; Heraclitus saw the

entire *kosmos* as being organized by a principle of *harmonia*; Empedocles introduced the idea of number in *harmonia* and also saw it as a binding, ordering principle in his cosmology; Philolaus took the role of number even further and conceived of *harmonia* as a particular numerical structure that manifested itself in various domains, joining limited things and unlimited things; the Hippocratics saw *harmonia* both as a mechanical joint and as a regulatory principle; both Homer's and Pindar's usages also carried political overtones. I also remarked, in Chapter 1, that *harmonia* is a remarkably productive concept because of its ability to cross over multiple domains. Given all this, it is easy to conclude that Plato was simply borrowing a term that was common among the pre-Platonics and that he used it, variously, in ways that mapped on to their different usages.

However, as I hope I've shown, in the course of this dissertation as well as this chapter, such a characterization would not be wholly accurate. It is indeed the case that Plato does not invent the concept of *harmonia* and nor is he the first to apply it to both the macrocosm and the microcosm. He does not, though, simply take over the concept without modifying it to fit within his own philosophical framework. I contend that Plato takes an extremely rich concept and imbues it with philosophical import when he describes it as an intelligible structure that entities can participate in. What the various *harmoniai* – the musical *harmoniai*, the psychic ones, the political ones, the somatic ones, the ones in craft – have in common is a particular kind of intelligible

structure. The dismissal of sensible *harmoniai* in *Republic* VIII and the elaborate discussion of the *harmonia* in the World Soul in the *Timaeus* lends further support to the claim that *harmonia* is essentially mathematical.

Plato's use of *harmonia* is at once narrower and philosophically richer than that of his predecessors. In the first place, *harmonia* is not just any kind of glue or bond between entities in a state of tension. Second, we have seen that, for Plato, in every case of an entity possessing *harmonia*, it is made good by the possession of that *harmonia* – while *harmonia* has never had a negative valence, it has not always been seen as an earned unity or as a good-making feature. In the Heraclitean universe, for instance, *harmonīē* is all pervasive, but it is a functioning of necessity rather than reason, to borrow a distinction from the *Timaeus*. Finally, we have also seen that the “true” *harmonia* that the philosopher ought to be concerned with, according to Plato in *Republic* VII and the *Timaeus*, in particular, is not audible *harmonia* but the *harmonia* that is supra-sensible. *Harmonia* is, at its core, a mathematical structure and is thus imbued with all the goodness and stability of number; it is for this reason that it brings about a good state whenever some entity participates in it.

This was not an uncommon reading among some of the Neoplatonist commentators – Proclus, for example, in his commentary on the *Timaeus* has no hesitation in talking about “*Harmonia itself*” as though it is something like a Form and while *harmonia* contains a range of features that are the proper of Form – it is

something that entities can participate in, it is perfect, good, and beautiful, true *harmonia* is intelligible rather than sensible, the presence of *harmonia* allows other entities to be harmonized, as in the case of musical *harmonia* – it is not at all obvious to me that *harmonia* is a Form. Rather, I think it much more plausible that it would belong with the intermediate mathematical entities since, like them, it is something that is essentially intelligible but that also admits of a sensible representation : that heard in audible *harmoniai*. However, just as we were not to confuse images of numbers and geometrical figures with the mathematical themselves, we should not conflate intelligible *harmonia* with its paradigmatic sensible manifestation.

Its precise ontological status remains somewhat ambiguous in much the same way that the status of mathematics does. Recall that Socrates deliberately refuses to discuss the proportions between the *objects* of the epistemological states discussed in the analogy of the Divided Line (*Resp.* 534). At any rate, the goal of our inquiry was not to uncover the ontological status of *harmonia* – which is a worthwhile project but a different one; our goal was, first, to see whether the different *harmoniai* that Plato speaks of do, in fact, have anything in common and second, to see whether or not *harmonia* is as important a Platonic notion as I claimed at the outset. At this stage, I believe that we can answer in the affirmative to both those questions.

The different *harmoniai* have in common the fact that they all participate in intelligible *harmonia*. The fact that some entities are less harmonious than others can be



explained in virtue of the fact that they participate in a lesser degree – the more they approximate intelligible *harmonia*, the more harmonious and thus the more *good* and *beautiful* they are. This idea is explained particularly well in the *Timaeus* when the intelligible world soul is imbued with this perfect *harmonia* by the Demiurge and the good for human beings is described as coming as close to this ideal *harmonia* as is possible.

It is important, also, to note that Plato's views on *harmonia* have little to do with supposedly Pythagorean views about *harmonia*. In *Republic* VII, he chastises those (presumably Pythagoreans) who look for consonances in audible sounds and ignore those that are in numbers. The Pythagoreans did not regard *harmonia* as a mathematical principle – or at least not primarily as a mathematical principle; it was, for them, something that was found in music from which we could *abstract* a mathematical structure. Such a view is, clearly, opposed to what Plato is claiming. The Pythagoreans would also run in to the problem of determining whether *harmonia* is a product or whether it is a principle, since they look for *harmonia* in music as well as in mathematics. Plato's dualistic metaphysics allows him to avoid this problem, since the *source* of *harmonia* will not be empirical; only its instantiations will be so. While *harmonia* and number were reportedly very important principles in Pythagorean cosmology, there was a fundamental ambiguity in their thought since number and *harmonia* were physical realities as well. Plato, however, liberates both of these from

any physicality and, in the *Timaeus*, describes the universe as a mixture of the intelligible and the sensible which is organized according to an *intelligible* principle of *harmonia*.

The answer to the second question is contained, to some extent, in the answer to the first. Since *harmonia* does operate in all these domains, it is surprising that so many discussion of Plato's ethics and politics, in particular, omit any mention of this at all. Plato unambiguously describes virtue as a harmonious state in more than one dialogue. Furthermore, his use of *harmonia* throws the isomorphisms between the microcosm and the macrocosm into sharp relief. Plato does not consistently identify *harmonia* with virtue but it is important that we recognize that *harmonia* is at least partly constitutive of the good for Plato, in the city, the soul, and the *kosmos* as a whole and, further, that each of these is good, at least partly, in the same way, i.e. by participating in *harmonia*.

We can also return to some key passages from the *Republic* if we need more support for this 'mathematical' reading of *harmonia*. Myles Burnyeat (2000, pp. 46 ff.), in a paper that is mostly an attempt at understanding why it is that mathematics is conducive to the good, has argued that Plato's discussion of harmonics is the key to better understanding how mathematical training is supposed to impart ethical understanding. He claims that the Platonic harmonics described in *Republic* VII imply that understanding the concordances between abstract numbers allows us to better

understand beauty and goodness. He also offers some valuable insights on why it was that certain numbers were seen as harmonious. First, he calls attention to the Archytan distinction between the three kinds of mean that were discussed already in Chapter 4 – the arithmetic, the geometric, and the harmonic (or subcontrary). Then, he draws upon Andrew Barker to explain the relationship between these ratios and Greek harmonics:

The series 6, 12, 24 etc., in geometric proportion, represents a sequence of notes an octave apart. If we take the first two numbers and insert the arithmetic mean, we get 6, 9, 12, the octave being divided into a fifth [because  $9:6$  is  $3:2$ ] followed by a fourth [because  $12:9$  is  $4:3$ ]. A harmonic mean inserted between the original terms gives 6, 8, 12 divided the octave into a fourth [because  $8:6$  is  $4:3$ ] followed by a fifth [because  $12:8$  is  $3:2$ ]. When the two sequences are combined, 6,8,9,12, they yield two fourths [ $8:6$  is  $4:3$  and  $12:9$  is  $4:3$ ] separated by the ‘tone’ of ratio  $9:8$  and can represent the fixed notes bounding a pair of joint tetrachords. [A tetrachord is a fourth, the upper and lower notes of which are fixed, but not the notes inserted in between. By varying the latter – in particular the distance of the highest from the upper bound – different musical ‘genera’ were produced: the enharmonic, the chromatic, and the diatonic. Thus the tetrachord is the basic unit of scalar organization.] These are the fundamental relations on which all the complex structures of Pythagorean and Platonist harmonics are built. (Burnyeat 2000, p. 51)

We also saw how, in the *Timaeus*, the Demiurge constructed the soul of the world (and, by consequence, the human soul) from 27 notes that began with two proportions: 1,2,4,8 and 1,3,9,27. Even though Archytas’ definitions were meant to apply to *sensible* entities, i.e. notes, Plato uses them for a *non-sensible* (or intermediate, properly speaking) entity, i.e. the soul. Burnyeat offers yet another piece of evidence in support

of Plato's claims about the concordance of numbers but, before we can fully comprehend that, we need to rehearse a little Greek mathematics. We do not know a great deal about early Greek mathematics before Euclid<sup>117</sup> who, in the preamble (section 25) to his *Sectio Canonis* says:

Γινώσκουμεν δὲ καὶ τῶν φθόγγων τοὺς μὲν συμφώνους ὄντας, τοὺς δὲ διαφώνους, καὶ τοὺς μὲν συμφώνους μίαν κρᾶσιν τὴν ἐξ ἀμφοῖν ποιοῦντας, τοὺς δὲ διαφώνους οὐ. τούτων οὕτως ἔχόντων εἰκὸς τοὺς συμφώνους φθόγγους, ἐπειδὴ μίαν τὴν ἐξ ἀμφοῖν ποιοῦνται κρᾶσιν τῆς φωνῆς, εἶναι τῶν ἐν ἐνὶ ὀνόματι πρὸς ἀλλήλους λεγομένων ἀριθμῶν, ἥτοι πολλαπλασίους ὄντας ἢ ἐπιμορίους.

Among notes, we recognize some as being concordant and others as being discordant, the concordant making a single mixture out of the two, the discordant not. In view of this, it is reasonable that the concordant notes, since they make a single mixture of sound out of the two, are among those numbers which are spoken of under a single name in relation to each other, being either multiple or epimoric.

This remark has a lot do with the Greek terminology for ratios. Given two homogenous magnitudes with the measurements  $p$  and  $q$ , respectively, the ratio between these is the quantitative relation  $p/q$ . The integer  $p$  is called the *prologos* or *hēgoumenos* and the integer  $q$  is called *hypologos* or *epomenos*. The main ratios employed in music are the **epimeric** (*epimerēs*), which has the form  $1+p/q$  or  $r+p/q$  and the **epimoric** (*epimorios*), which has the form  $1+1/q$  or  $r+1/q$ <sup>118</sup>. Burnyeat (2000) points out

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<sup>117</sup> Leonid Zhmud (2012, p. 275) argues that Hippasus, who lived a century before Plato, was an early student of Pythagoras and was studied harmonics and mathematics. However, none of the fragments attributed to him have are regarded as authentic and we have only testimonia to rely on. Horky (2013, pp. 60–75) offers a useful overview of Hippasus' thought that deviates somewhat from Zhmud's (2012).

<sup>118</sup> Most of this terminology is taken from Theon of Smyrna's *Mathematics Useful for Understanding Plato*

that there were a series of one-word expressions for epimoric ratios – 3:2 (the fifth in music) is *hēmíolos*; 4:3 (the fourth in music) is *epitritos*, etc. and Euclid’s idea, thus, is that “Greek gives apt recognition to the unity of sound in concord by assigning a single expression to the corresponding mathematical ratio” (48). According to Ptolemy (*Harmonics* I.5), the Pythagoreans argued, for strictly mathematical reasons, that epimoric ratios were preferable to epimeric ratios because of the simplicity of comparison between the terms of the ratio. Barker (2011) has argued that Archytas is the most likely source for this report of Ptolemy’s. If this is indeed the case – and Barker offers us compelling reasons for accepting that it is – Plato had, in Archytas, a basis for claiming that some *numbers* are more harmonious than others without making any reference to sensible entities such as notes. We have reason, then, to believe that *harmonia* proper, the one that is to be found in numbers, has the structure of a ratio.

However, Plato is not, clearly, just blindly following Archytas, since he would presumably hold Archytas at fault for using better and worse ratios to explain less and more pleasurable musical experiences. As we saw in the previous chapter, Plato thinks that the goal even when listening to audible *harmonīē* is not to derive thoughtless *hēdonē* from the sounds, but to apprehend the *structure* of sound and thus derive *euphrosynē* – here, perhaps, is Plato at his most Heraclitean, claiming that the *harmonīē aphanēs* is preferable to the apparent one. Nor are all these ideas developed only in the *Timaeus*

or in the later books of the *Republic*; these are ideas that have been foreshadowed from the *Gorgias* onwards and I am in complete agreement with Burnyeat (2000, p. 55):

If readers of the *Republic* start out with the impression that Plato's talk about concord and attunement in the soul is meant as a metaphor, they should have second thoughts when they come to the passage about mathematical harmonics, which explicitly denies that concord has to be a relation between sounds. In Plato's view, concord can also be a relation between pure numbers. In which case there is no reason to cry 'Metaphor!' when Plato has Socrates speak of concord between the different parts of the city and the soul. For a Platonist, much that we lesser mortals take as metaphor comes to be seen as a further instantiation of a concept which is more abstract and wide-ranging than ordinary folk suppose. The *Timaeus* account of the musico-mathematical structure of the soul may be hard for us to grasp, but to call it metaphorical would be absurd.

Understanding *harmonia* as an intelligible structure, rather than as merely metaphorical or as a term vaguely connoting a good and ordered state, also allows us to solve a few puzzles. For instance, we saw that certain musical *harmoniai* were said to inculcate virtue in young children by imitating virtuous individuals – it was not clear, however, *what* was being imitated. We can now posit that the best kinds of *harmoniai* imitate the best kinds of souls and, as we have seen, the best kinds of souls have a particular structure that differentiates them from other souls; it would not be unreasonable to suppose that it is the self-same structure which is instantiated both in souls and in the music that imitates them. We saw that the idea that music can affect a soul did not originate with Plato; however, his discussion of harmonic education is distinct from Damon's, for instance, because of the particularities of his metaphysical system.

While *anyone* can be affected by *harmoniai*, it is only the philosophers, those who study mathematical harmonics, who will understand how and why this is the case and they are, thus, to be the only people entrusted with deciding the educational program (as in the *Republic*) and, in general, with governing the city. They alone know what intelligible *harmonia* is and thus they can ensure, for instance, that only those modes that participate in it be taught. They are also the only ones capable of statecraft because they know what structure is to be imposed upon the best kind of *polis* – they create and maintain good structures, at the level of the institution as well as at the level of the *psychē*.

The activity of the rulers in the *kallipolis* also closely parallels the activity of the Demiurge in the universe. As I discussed in the previous chapter, the Demiurge is responsible for creating the soul and body of the world (*to pan*) as well as the human soul. It is interesting that Plato does not describe the universe as “*kosmos*” (order) initially but rather as “*to pan*” (the whole) – this makes sense since “*kosmos*” is something that the Demiurge imposes upon it by copying an intelligible structure. The soul and body of the world are perfect *because* the Demiurge constructs them in accordance with harmonic proportions.

We have seen, then, how *harmonia* as a mathematical structure operates throughout the microcosm and the macrocosm and how, in each case, it serves to make the entities in which it is instantiated better. We should be careful, though, not to

overstate the case. In saying that good souls, cities, and an ordered universe are structured harmonically, I am not equating *harmonia* with the Good. We need *harmonia* in order to be able to ascend to the study of the Good which is, for Plato, the highest study (*megiston mathēma*, *Resp.* 505a). Sedley (1997) has rightly drawn attention to “*homoioōsis theiō kata ton dunaton*” (becoming as godlike as possible) as being a central tenet of Platonism and it is true that the *Timaieus* describes this as apprehending the *harmonia* of the World Soul and assimilating to it as far as we can. However, it would be a mistake to take this as the ultimate goal of human life – indeed this would flatly contradict Plato’s claims about dialect and the role of the Good in the *Republic* and elsewhere. Becoming like god is the crucial *first step* towards understanding the good; thus *harmonia* is not an end in itself, but a crucial means to the most important end.



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